The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LXVII, No. 1 CHICAGO, ILLINOIS JULY 1, 1916

RESUSCITATION APPARATUS

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During the past four or five years a number of mechanical devices for resuscitation from electric shock, drowning, and asphyxiation by poisonous gases have appeared on the market. Properly speaking, none of these devices is anything more than a means of supplying artificial respiration with air more or less enriched with oxygen. There has been a general failure to distinguish between a method for maintaining the pulmonary ventilation and methods (for practical purposes as yet undiscovered) for restoring the heart beat after fibrillation or standstill, and for counteracting the paralyzing effects of asphyxia on the nerve centers of the brain and cord. This has resulted in the term "resuscitation" apparatus being generally applied. It is important to keep in mind the limited character of this resuscitation.

The demand for such apparatus arises from the modern "safety first" movement. Any piece of apparatus which proved fairly effective for resuscitation would undoubtedly be a source of great financial profit to its manufacturers. Competition is already keen, and new forms of apparatus are demanding advertising space in medical journals.

As a result editors, superintendents of hospitals, mines, gas works, electric light and telephone companies, commissioners of city police and fire departments, persons in charge of swimming places, and others are writing in increasing numbers to the United States Bureau of Mines to ask as to the value of such apparatus in general, and as to the relative merits of the different kinds.

This paper is intended to supply such information. I have served as consulting physiologist to the bureau during the past three years, have examined for it such apparatus as has been submitted, and have cooperated with the engineers of the bureau in drawing up the regulations covering such matters. I was also a member of the Resuscitation Commission of the American Medical Association and the National Electric Light Association, which in 1913, with Prof. W. B. Cannon as chairman, studied and reported on resuscitation apparatus and methods, and which later made a similar report to the Bureau of Mines.[1]

1. Report of the Commission on Resuscitation from Electric Shock, published by the National Electric Light Association, New York, 1913. Report of the Committee on Resuscitation from Mine Gases, Technical Paper 77, U. S. Bureau of Mines, Washington, 1914. Work of the Commission on Electric Shock, editorial, THE JOURNAL A. M. A., Nov. 1, 1913, p. 1637.

It is noteworthy that the control over the manufacturers of resuscitation apparatus indicated in the preceding paragraph has not had back of it any specific legislation. The approval or disapproval of the Bureau of Mines and of the National Electric Light Association, and the acceptance or rejection of advertisements by such magazines as THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, practically make or destroy the market for apparatus. Both in effectiveness and in flexibility, this method of control under disinterested expert advice and solely in the interest of the public seems far preferable to that by legislation, either national or by the separate states.

PULMOTOR

The first of the several forms of apparatus now on the market to attract attention was the pulmotor. In this device a tank of compressed oxygen was connected through a reducing valve with an injector, so that a considerable volume of air was drawn in, mixed with the oxygen, and the current directed through a hose to the face mask. It was generally believed by persons purchasing the pulmotor that pure oxygen, or air greatly enriched with oxygen, was supplied to the patient. This, however, was not the case, as the injector diluted the oxygen with ten or twelve times as much air. In various analyses the oxygen content of the gas supplied by the pulmotor was found to be about 28 or 30 per cent. As pure air contains 21 per cent., the oxygen enrichment was therefore not considerable. The purpose really served by the compressed oxygen was to supply the motive power which worked the apparatus. Compressed air would have been equally effective for this purpose.

The force of the air coming from the injector actuated an ingenious mechanical device by which a valve was alternately thrown in one direction or the other, so that air was blown to or sucked from the mask fastened over the patient's face. In order for this device to reverse, however, a considerable positive or negative pressure was necessary, and these pressures came just at those points in respiration at which they were most unnatural. Furthermore, in case of any obstruction to the flow of air, the positive and negative pressures necessary to reverse the apparatus were induced in such rapid succession that the suction and injection phases alternated too rapidly for the subject's lungs to be properly distended and deflated. This was liable to occur if for any reason there was an obstruction in the throat. Some part of the injector or reducing valve was also found liable to get out of order, thereby rendering the apparatus ineffective.

The objections to the pulmotor concerned not only its deficiencies as a means of administering artificial respiration, but also its extraordinary effect on public

opinion. Although its manufacturers, the Draeger Company, have shown themselves at all times during my experience with them to be a highly honorable and well intentioned business concern, nevertheless there has probably never been invented an apparatus which of its own accord aroused such extravagant and unfounded expectations among the general public. It was, indeed, impressive to see the apparatus working automatically. Coupled with the ignorance of most persons as to the distinction between mere unconsciousness and respiratory failure, and as to what part treatment can play in resuscitation, the interest which the pulmotor excited caused it for a time to receive such an amount of free advertisement through the newspapers as would undoubtedly have resulted in its being purchased almost universally within a few years. Public opinion in numerous cities compelled the gas, electric light and telephone companies, and the fire and police departments to purchase pulmotors. From the newspaper accounts of cases in which the pulmotor was employed, one would have supposed, and many persons, including even physicians, evidently did believe, that the pulmotor was practically capable of restoring the dead to life. It was described as "forcing oxygen in and sucking the poisonous gases out." For a while no one seems to have inquired why, in these processes, the lungs were not exploded. or the pulmonary blood sucked out through the trachea.

This exploitation was brought to a sudden stop by the report three years ago of the Commission on Resuscitation, adverse to the apparatus, or rather to the extravagant reports and beliefs current concerning it. In particular, the investigations of the committee showed conclusively that in at least a large percentage of the alleged resuscitations — especially from illuminating gas poisoning — the subject was breathing spontaneously before the apparatus was applied. Artificial respiration was therefore not needed and could not possibly have contributed materially to the patient's recovery.

LUNGMOTOR

The other devices thus far placed on the market are of a simpler type. The "lungmotor" consists of two pumps — to all intents and purposes, such pumps as are used to inflate bicycle or automobile tires. They are fastened together in such fashion that the down stroke forces air from one of the pumps into a mask held over the patient's face, while the up stroke withdraws some of the air from the patient's lungs into the other pump. An oxygen tank can be connected so that the air injected into the lungs can be enriched to any desired extent with oxygen.

The advisability of actively withdrawing air from the lungs is a matter on which there may at present be a reasonable difference of opinion. Such light as experiment can throw on the matter is afforded by the fact that some years ago an apparatus which worked in this fashion was invented by Prof. Hans Meyer of Vienna and was installed in a number of physiologic laboratories both in America and Europe. Apparently it has been generally discarded, and return has been made to the ordinary method of intermittent injection of air into the lungs with intervening periods for the elastic recoil of the chest to force the air out through a hole in the side of the tube leading to the mask or tracheal cannula. I am inclined to doubt, however, whether an active withdrawal of air with a pump of limited stroke has any very serious objections, since the suction ceases at the end of the stroke. Some years ago in experiments with two pumps arranged in a manner similar to the "lungmotor," and worked quite violently, I observed no particular ill effects on the lungs. The manufacturers of the "lungmotor" claim that in drowning cases the suction feature is advantageous. The apparatus can be worked so as to use only the injection pump, by leaving the tube to the suction pump disconnected.

VIVATOR

Even simpler is the "vivator." It consists of one pump, which forces air through a tube to the mask held over the patient's face when the plunger is forced down, and of a valve which is opened to allow this air to escape during the upstroke of the pump. It is practically identical with a simple arrangement of an automobile tire pump which has worked satisfactorily for experiments requiring artificial respiration in my laboratory for the past ten years. It is, however, rather clumsy and noisy. It is possible that both with it and with the "lungmotor" a somewhat excessive positive pressure might be produced. To prevent this it appears advisable that in apparatus of the pump type there should be a blow-off valve or equivalent device, set to open under a water column pressure of 25 cm. (10 inches), and that when as in the "lungmotor" there is also a suction pump, there should be an inlet valve set to open under a pressure of 15 cm. (6 inches). It would be of advantage also if there were another valve on the mask which could be opened in order to test the capacity of the victim to maintain natural breathing without removal of the mask.

PULMOTOR MODEL B

Recently the Draeger Company has brought out an apparatus which they call the "Pulmotor Model B." Its motive power is supplied either by a tank of compressed oxygen or by a tank into which air is first pumped by the operator. The compressed gas, oxygen or air, passes through a tube to an injector where it aspirates a considerable amount of outside air and thus provides a sufficient current and pressure for artificial respiration. By means of a switch worked by hand the injector can be directed so that the current is blown through a tube to the face mask, or aspirates the air from it. The apparatus is in all essentials a pulmotor without the automatic feature, to which the committee mentioned above particularly objected, and which exercised for a time such a hypnotic effect on newspaper reporters and the public.

The "Pulmotor Model B," like the original form, appears not to be capable of supplying a high percentage of oxygen, as the injector necessarily draws in a considerable volume of air with which the oxygen is diluted. The mechanism of the apparatus is also rather delicate and liable to be put out of order by rough usage. On the other hand, in a hospital or laboratory where compressed air is available, or where a small air blower connected with an electric motor could be installed, for treatment in morphin cases or asphyxia neonatorum, or in the operating room, it is possible that "Pulmotor Model B" might prove a satisfactory and useful instrument. For the intern charged with maintaining respiration in a morphin case and with compressed air at hand, it would certainly have the advantage of being far less tiring than any other piece of apparatus now available.

In order to avoid any danger of excessive positive or negative pressure, it is recommended that there should be inlet and blow-off valves set to a positive pressure of

not more than 15 cm. (6 inches) water gage, and a negative pressure of 10 cm. (5 inches) water gage. The limits of pressure should be lower than in the case of pump apparatus because the patient's lungs may be subjected to the pressure for a longer time. The apparatus should also be made capable of feeding pure oxygen, or at least air largely enriched with oxygen.

OTHER APPARATUS

The latest but probably by no means the last apparatus to appear is the "life motor." This device has not yet come under my examination. It is claimed, however, by its manufacturers that it is an efficient and easily adjustable apparatus for administering artificial respiration, and for supplying oxygen or air enriched with oxygen.

There is really no limit to the number of devices of this sort which can be, and perhaps will be, got up: hand bellows, foot bellows, bellows run by a motor, pumps, single and double, acting directly or through an injector. The mechanical requirements are easily met. The important thing is that the apparatus should be of such a simple character as not to impose on the credulity of the ordinary man. All that any apparatus yet invented can accomplish is artificial respiration with air enriched with oxygen. The superiority of a mere pump over any automatic apparatus lies in its simplicity. The same men who regarded the pulmotor with awe and wonder remark, of the "lungmotor," "Why, you can blow up an automobile tire with that thing."

MANUAL METHOD VERSUS APPARATUS IN ARTIFICIAL RESPIRATION

Even in respect to a simple pump, evidence is accumulating that physicians, as well as laymen, are prone to overestimate what can be accomplished with apparatus. In consequence, the immediate application of manual artificial respiration is neglected, and thereby life is lost while the apparatus is being sent for and brought. Thus in a recent disaster in which an overcrowded vessel sank at its wharf, it appears that the victims when taken from the water, instead of being treated immediately by the prone pressure method, were carried some distance to a temporary hospital and were then treated with apparatus. Probably all of them were beyond recovery even when taken from the water; but it is significant of the overestimate placed even on so obvious a thing as a pump that some physicians are reported to have expressed surprise that the apparatus (lungmotors) effected no resuscitations.

On the scientific side there can be no doubt that in a man or animal in whom natural respiration has ceased but the heart is still beating, life can be maintained more easily and much longer by means of artificial respiration administered with a pump or bellows than by means of either the Sylvester or Schäfer manual methods. In all physiologic laboratories, apparatus for maintaining artificial respiration is provided. If an experiment is to be performed in which spontaneous breathing is eliminated (as under curare or after decapitation), no physiologist relies on his janitor or laboratory boy to keep the animal alive by squeezing the chest or working the fore legs.

The Resuscitation Commission found that although the prone pressure method of artificial respiration devised by Schäfer[2] is in nearly every respect superior to the Sylvester method, yet the claim of Schäfer that by his method as much air can be administered even to an apneic subject as is obtained by the subject in normal breathing is not justified. It is true that in experiments on normal men, if the subject is not in apnea, as much air — in fact *exactly* as much and never appreciably more or less — is drawn in and forced out of the subject's lungs by the prone pressure method, as the subject would himself spontaneously breathe. It was, indeed, the noting of this fact which led me, while working on the commission, to discover that in a conscious, normal, not apneic subject, the subject's own respiratory center, rather than the exertions of the operator, determines the amount of pulmonary ventilation afforded by the prone pressure method. The operator squeezes air out of the lungs, but between the applications of pressure the subject's respiratory muscles draw in what he needs — no more and no less. In fact, the chemical control of respiration is strikingly exemplified by the behavior of a normal man under "artificial" respiration. On the other hand, after the subject has performed forced breathing and has thus brought himself into a condition in which there is no spontaneous activity of the respiratory center, the amount of ventilation obtained by the prone pressure method is markedly reduced.

Furthermore, it was found on animals in respiratory failure (induced by an excess of chloroform) that the amount of air, as measured by a spirometer connected with the trachea and recording on a smoked drum, which can be drawn in and forced out of the chest by manipulation of the fore limbs and squeezing of the chest and abdomen, gradually decreases as the muscles of the body lose their tonus. At first and while the tonus or elasticity of the muscles is still high, soon after spontaneous breathing has ceased, a very considerable movement of the spirometer can be induced. But after ten or fifteen minutes, when the body has become entirely flaccid, only a quite negligible movement of air in and out of the chest results, even from the most vigorous stretching and compression.[3]

While working on the Resuscitation Commission, Dr. Meltzer found that in dogs after abolition of muscular tonus by means of curare, the Sylvester method supplied a respiration sufficient to maintain the heart beat for only twelve minutes, while with the Schäfer method the shortest time was eighteen minutes and the longest thirty-one. With no treatment whatever, the heart would have continued to beat for from eight to ten minutes.

The most important scientific point in this connection, however, is the fact that from the moment when spontaneous respiration ceases, whether by drowning, electric shock, excess of anesthesia, gas poisoning or any other form of asphyxia, the probability of restoration by any method grows rapidly less as the minutes pass. The Resuscitation Commission, after considering the matter in the light of such evidence as is available, concluded that probably ten minutes is the extreme limit of time beyond which restoration is practically impossible. It is true that there are occasional popular reports of persons who are supposed to have been in the water or buried in a cave-in for a longer time than this, and who have been restored; but in such cases it is highly improbable that there was complete submergence or that the reports in other respects represent the actual facts. In the class of cases with which I am best acquainted, namely, those in which

2. Schäfer, E. A.: Harvey Society Lectures for 1907 1908, New York, 1909, p. 223.

3. Liljestrand, Wollin and Nilsson made similar observations (Skand. Arch. f. Phys., 1913, xxix, 198).

respiration fails under anesthesia in cats and dogs under experiment, the large majority have proved susceptible of restoration by the administration of artificial respiration, provided it was given immediately. Indeed, I have a strong impression that during the first minute after the cessation of breathing, the administration of manual artificial respiration is more effective than that by means of a pump or bellows, the reason apparently being that a slight assistance is given to the heart and circulation by the manual method which is not afforded by mere changes of air pressure in the lungs. Certainly both in the laboratory and operating room, in the great majority of cases the immediate application of manual artificial respiration is effective in restoring normal breathing. On the other hand, a delay of even two or three minutes has usually resulted in the failure of the efforts applied thereafter; and if the animal has been left without measures of resuscitation for five minutes after the cessation of spontaneous breathing, the subsequent efforts at revival have never been successful.

In the large majority of the reports of alleged restorations effected with apparatus, the statement that the apparatus was telephoned for and was rushed to the spot is a significant item. A telephone lineman touches a wire which has been crossed with a power line, and falls to the ground unconscious and apneic. A man who went to bed drunk in a cheap hotel is found in the morning with the gas turned on. A man in a trench in the street over a leaking gas pipe is overcome. A longshoreman falls into the harbor and is hauled out and laid limp on a wharf. Suppose that in such cases the rescuer runs to the nearest telephone. Apparatus is "rushed to the spot." If it arrives after the tenth minute (and it will seldom arrive so soon) the man is dead, and the vigorous working of the apparatus for the next hour succeeds at most in producing an emphysema in the corpse. Even in the unusual case in which the apparatus arrives and is applied in six or eight minutes, the chances of resuscitation are not nearly so good as they would be if the prone pressure manual method had been begun within thirty seconds after the accident.

In those cases in which apparatus was not applied until twenty or thirty minutes after the accident or after the patient was found — and such cases form the large majority of alleged cures — it is practically certain that the patient never ceased to breathe spontaneously, and that the apparatus contributed nothing material to his recovery. This was true of practically all the cases investigated by the Resuscitation Commission, and it is true of a number of cases which I myself have attended (as an observer) since the commission made its report. It is significant that the attending physician in some of the latter cases was inclined to attribute to the effects of apparatus recoveries which were clearly and solely the result of nature.

From these facts it seems fair to advise that breathing apparatus should be provided in those fields of work in which it can be at hand when an accident occurs, but not for cases in which it must be sent for. A reliable air pump for artificial respiration is an important part of the equipment of a mine rescue crew — not so much for the men rescued from an exploded or burning mine as for use on members of the rescue party who may be overcome. Artificial respiration apparatus could advantageously be kept at bathing beaches. It might also sometimes be useful for the men in a city fire department. In nearly any hospital it is likely sooner or later to prove useful. Apparatus suitable for use on new-born infants should be introduced into every maternity ward. It does not appear, however, that *unless the employees of a gas, electric light or telephone company have been drilled in manual methods and warned not to wait for apparatus*, the purchase of apparatus will appreciably decrease the likelihood of fatalities outside of the central works. An apparatus kept at police headquarters to be sent in an ambulance is a waste of money and a probable increase of the hazards of life. The general training of policemen, firemen, and especially schoolchildren in the prone pressure method would save more lives than the purchase of any amount of apparatus.

As a means of partially counteracting the tendency to exaggerate the value of apparatus, the Bureau of Mines recommends that the directions which go with every piece of apparatus should include the description of the prone pressure manual method as given in Miners Circular No. 8, and that there should also be printed on the outside of the case containing the apparatus, in prominent characters, words to the following effect:

> If spontaneous breathing has ceased and this apparatus is not already on the spot, administer artificial respiration by manual methods without the loss of a moment, and continue to do so until the apparatus is brought. Otherwise, life will be extinct before the apparatus arrives. Except to remove the patient from a locality containing irrespirable gases, never carry him to the apparatus; he will be dead before he gets there.

Finally, attention should be called to the value of oxygen inhalation apart from artificial respiration for men who have been "gassed" or overcome by smoke nearly or quite to the point of unconsciousness, but not of respiratory failure. For this purpose the method of feeding the oxygen through a funnel suspended some inches above the patient's face, as is done in some hospitals, especially in pneumonia and illuminating gas cases, is entirely inefficient and wasteful. Most of the gas blows or diffuses away, and the air inhaled is enriched by only 3 to 5 per cent. of oxygen. The proper administration of oxygen requires an apparatus similar in type to that by which nitrous oxid is usually given, except that there should be no rebreathing. It consists of a tank of compressed oxygen connected by a tube to a rubber bag of from 5 to 10 quarts' capacity, and a mask with an inspiratory valve connected with the bag and an expiratory valve to the outside air. An appliance of this sort is sold by some of the manufacturers of mine rescue apparatus, and should be included with all apparatus for artificial respiration. The gas tank, rubber bag and mask are obtainable in any large city, and are easily combined.[4] Such apparatus would spare many a city fireman a bad headache and sometimes a weakened heart.

CONCLUSIONS

1. Universal training in the prone pressure manual method of artificial respiration will accomplish more for resuscitation from drowning, electric shock, and asphyxia than is possible by providing any amount of apparatus.

2. Artificial respiration with apparatus is superior to the manual method, in that the apparatus is capable of giving a normal volume of pulmonary ventilation while the manual method is not.

4. Illustrations and description may be obtained by application to the Bureau of Mines.

3. Nevertheless, the immediate application of a poor method is far more important than the application of a perfect method after a delay of even five minutes. The knowledge that apparatus is available is liable to result in a neglect of immediate manual treatment in order to have the apparatus brought from a distance.

4. Apparatus should be provided only in places in which it will be immediately available.

5. Since all that any apparatus yet invented affords is artificial respiration with air more or less enriched with oxygen, it should be of a simple type so as not to produce exaggerated ideas of its efficiency.

6. Oxygen inhalation should be used immediately in gas and smoke cases, but the apparatus employed should be such as will allow the oxygen to reach the patient's lungs in efficient concentration. Such apparatus should go with every artificial respiration device.

7. Investigation of the use of artificial respiration apparatus in asphyxia neonatorum is needed.

A STUDY OF OPHTHALMOSCOPIC CHANGES IN NEPHRITIS*

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In this paper the tabulated histories which make up its major portion are abstracted from a series of observations made in the clinic of ophthalmic surgery of the University of Michigan, and are arranged in parallel columns in juxtaposition with the medical diagnosis and an abstract of the laboratory findings in each case. While some of the cases might possibly have been somewhat differently classified, the fact that the diagnosis was made in the clinic of internal medicine in connection with the symptoms and with the many other features which could not be presented within the limits of this paper has seemed to be a sufficient reason for accepting the medical diagnosis without question.

The conclusions and summaries are based exclusively on the tabulation of the features observed. While this study has been carried on with a full knowledge that the ground has already been repeatedly covered, the excuse for presenting it is that it has been stimulated by a desire for a grouping of the several features of fundus changes as seen in nephritis, with reference, first, to the pathologic changes in the retina as compared with those found in the kidney; second, to ophthalmoscopic features of diagnostic value, particularly with regard to early diagnosis; and third, to the differential diagnostic value of the ophthalmoscopic fundus lesions found in the different forms of nephritis. As a control, several cases of hypertension and a few miscellaneous cases presenting fundus lesions suggesting nephritis have been included.

An interesting didactic discussion of the fundus lesions seen in the various forms of nephritis and a digest of the literature of this subject have been recently made by Dr. A. E. Bulson[1] of Fort Wayne, Ind. In this paper Dr. Bulson mentions the fact that Sutton and Gull, Herrick, Edwards, Kelly, Rodner and others classify chronic nephritis as a part of a general angiosclerosis. This series of studies does not seem entirely to support this classification or the idea that radiating macular changes are common or frequent features of interstitial nephritis.

The cases included in this report have been divided into five classes, as follows: A, chronic interstitial nephritis; B, chronic nephritis; C, acute nephritis; D, hypertension, and E, miscellaneous cases.

Taking up the ophthalmoscopic notes, we find edema present in 93 per cent. of the cases. The fact that it was found in all cases of hypertension and in 96.7 per cent. of the cases of chronic interstitial nephritis seems to indicate a vascular rather than a nephritic origin. In the few cases of acute nephritis examined it was the least frequent, which tends to support such a conclusion. Its relation to the blood pressure does not appear, as it was present in the cases of chronic nephritis with lower blood pressure, quite as regularly as in other chronic cases of either parenchymatous or interstitial type: in the cases of acute nephritis when the blood pressure was low it was present in but 75 per cent., and in addition it was present in the one case showing rather high arterial tension. Congestion and slight swelling of the disk were present in 39.7 per cent. of the cases, being rather more frequent in chronic than in acute nephritis, but most frequent in hypertension.

All of the cases of chronic interstitial nephritis with swollen disks of 1 D. or more occurred in cases of marked increase in blood pressure. Especially is this

* Read before the Section on Ophthalmology at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

1. Bulson, A. E.: Ophth. Rec., December, 1915.

ILLUSTRATIVE CASES FROM TABLE 1.—SERIES A: CHRONIC INTERSTITIAL NEPHRITIS

Medical Findings and Diagnosis	Sex	Age	Vision O. D.	Vision O. S.	Ocular Findings
3. C. J. 12/2/12. Diagnosis: Chronic interstitial nephritis; uremia; dilated heart; hydrothorax; radial and temporal vessels sclerosed. Urine: Large amount of albumin; granular and hyaline casts. Phenolsulphonephthalein elimination, 7 per cent. in two hours. Blood: B. P., 150 to 190; R. B. C., 3,500,000; W. B. C., 12,700; Hgb., 45 per cent.; blood urea, 1.34 gm. liter.	F	48	5/10	5/6	O. D. Marked endarteritis; arteriovenous compression dilatation. Marked retinal edema; flame-shaped hemorrhages; exudative changes. Minute exudative spots in the macula. O. S. Rounded hemorrhages; glistening white spots, a few exudative changes and slight pigment change in the macula. Tortuosities of the macular vessels, one macular vessel silver wire. Otherwise same as O. D.
23. A. B. 3/15/15. Diagnosis: Chronic interstitial nephritis; uremia; arterial sclerosis; hypertension. Urine: Large amount of albumin; many hyaline, granular and epithelial casts. Phenolsulphonephthalein, no elimination in two hours. Blood: B. P., 175 to 180; R. B. C., 2,650,000; W. B. C., 8,800; Hgb., 31 per cent.; blood urea, 3.59 gm. per liter. Wassermann neg.	M	47	5/10	5/15	O. D. Disk swollen 3 D., edematous and markedly congested. Arteries much contracted; arteriovenous compression. Retina markedly edematous; deep and superficial hemorrhages about the disk and macula. Macula edematous. O. S. Disk is swollen 3 D.; marked edema with congestion, inflammatory infiltration and hemorrhages. Arteries are very small. Retina shows marked edema with numerous round, flame-shaped and superficial hemorrhages. Macula shows chorioretinitis with edema.

ILLUSTRATIVE CASES FROM TABLE 2.—SERIES B: CHRONIC NEPHRITIS

	Medical Findings and Diagnosis	Sex	Age	Vision O. D.	Vision O. S.	Ocular Findings
1.	G. M. 12/12/12. Diagnosis: Chronic nephritis; secondary contracted kidney, interstitial type. Urine: Albumin, large amount; hyaline and granular casts. Phenolsulphonephthalein elimination, 31 per cent. in two hours. Blood: B. P., 250 to 216; R. B. C., 3,600,000; W. B. C., 11,200; Hgb., 66 per cent.; blood urea, 0.71 gm. per liter.	F	56	5/7	5/7	O. D. Nerve head swollen 4 D. Hemorrhages about the disk. Marked periarteritis; arteriovenous compression dilatation. Retina edematous in which tortuous veins are embedded; veins engorged. Macular vessels corkscrewlike; beginning star-shaped figure. O. S. Condition the same as O. D., swelling the same. More numerous and more extensive hemorrhages, both retina and macula.
6.	A. M. N. 4/4/13. Diagnosis: Chronic nephritis, late stage; mitral regurgitation. Urine: Large amount albumin; granular casts. Phenolsulphonephthalein elimination, 22 per cent. in two hours. Blood: B. P., 180 to 204; R. B. C., 4,460,000; W. B. C., 25,200; Hgb., 55 per cent.; blood urea, 0.80 gm. per liter.	M	47	6/5	6/5	O. D. Periarteritis; periphlebitis; vessels tortuous; marked endarteritis; arteriovenous compression. Retina edematous; several small hemorrhages; retinal sclerotic change above the macula. Macula granular and edematous. O. S. Marked perivasculitis; arteries very tortuous; endarteritis; arteriovenous compression. Retina hyperemic, marked edema. Macula edematous with beginning sclerotic change.

ILLUSTRATIVE CASES FROM TABLE 3.—SERIES C: ACUTE NEPHRITIS

	Medical Findings and Diagnosis	Sex	Age	Vision O. D.	Vision O. S.	Ocular Findings
1.	W. H. 3/13/13. Diagnosis: Acute nephritis; paralysis from anterior poliomyelitis, attack four years ago. Urine: Albumin, present; granular casts. Phenolsulphonephthalein elimination, 70 per cent. in two hours. Blood: B. P., 125; R. B. C., 4,600,000; W. B. C., 14,300; Hgb., 75 per cent.	M	19	5/4	5/4	O. D. Nerve head congested and edematous. Marked perivasculitis; veins engorged; arteriovenous compression dilatation. Macula edematous. O. S. Disk more edematous. Some endarteritis; small veins tortuous. Condition practically the same in O. U.
4.	A. B. 3/25/15. Diagnosis: Subacute hemorrhagic nephritis; septic tonsils. Urine: Albumin, small amount; large numbers of red blood cells; hyaline and blood casts. Phenolsulphonephthalein elimination, 47 per cent. in two hours. Blood: B. P., 126; R. B. C., 6,720,000; W. B. C., 14,600; Hgb., 80 per cent.; Wassermann negative.	M	24	5/3	5/3	O. D. Disk normal. Slight endarteritis; slight venous engorgement. O. S. Disk slightly hyperemic. Endarteritis and slight venous engorgement.

ILLUSTRATIVE CASES FROM TABLE 4.—SERIES D: HYPERTENSION

	Medical Findings and Diagnosis	Sex	Age	Vision O. D.	Vision O. S.	Ocular Findings
1.	M. C. 12/19/12. Diagnosis: Hypertension. Urine: Albumin, negative; no casts. Phenolsulphonephthalein elimination, 72 per cent. in two hours. Blood: B. P., 230 to 140; R. B. C., 4,700,000; W. B. C., 7,500; Hgb., 100 per cent.; blood urea, 0.36 gm. per liter.	F	48	5/5	5/6	O. D. Disk hyperemic. Retina hyperemic and edematous; one small hemorrhage. Arteriovenous compression; slight endarteritis. Small exudate in the macula. O. S. Disk more hyperemic. Macula edematous. Endarteritis; tortuous arteries and veins; no hemorrhages; one exudative change below the macula (old hemorrhage?).
6.	T. A. S. 5/22/13. Diagnosis: Hypertension; arterial sclerosis; chronic nephritis. Urine: Albumin, negative; hyaline casts. Phenolsulphonephthalein elimination, 61 per cent. in two hours. Blood: B. P., systolic 232, diastolic 185; R. B. C., 4,810,000; W. B. C., 9,650; Hgb., 85 per cent.; Wassermann negative.	M	78	5/20	5/7	O. D. Disk hyperemic. Veins engorged and tortuous, periarteritis; endarteritis; arteriovenous compression dilatation. Retina edematous; area of retinal change with swelling near the disk; localized detachment. White spots above the disk and the superior macular region. Two small linear hemorrhages. O. S. Disk swollen 1 D.; edematous and hyperemic. Perivasculitis; small hemorrhage near the disk; veins engorged; temporally the vessels are tortuous; arteriovenous compression dilatation. Retina edematous, some scattering hemorrhages and old hemorrhagic areas. Macula edematous.

ILLUSTRATIVE CASES FROM TABLE 5.—SERIES E: MISCELLANEOUS RETINAL CONDITIONS SUGGESTING NEPHRITIS

	Medical Findings and Diagnosis	Sex	Age	Vision O. D.	Vision O. S.	Ocular Findings
1.	L. F. 3/20/13. Diagnosis: Secondary anemia from recurrent uterine hemorrhages. Urine: Albumin, negative; casts, negative. Phenolsulphonephthalein elimination, 59 per cent. in two hours. Blood: B. P., 170 to 180; R. B. C., 3,200,000; W. B. C., 8,900; Hgb., 39 per cent.; blood urea, 0.44 gm. per liter.	F	49	5/6	5/6	O. D. Periarteritis and endarteritis; veins irregular in caliber; arteriovenous compression dilatation. The retina is hyperemic and edematous; some localized sclerotic retinal changes below the macula. Macula edematous. O. S. Sclerotic retinal changes above and below the macula, also nasally. Slight choroidal changes; otherwise does not differ from O. D.
7.	A. D. 4/17/15. Diagnosis: Cerebral arterial sclerosis; moderate hypertension; myocardial degeneration; emphysema and chronic bronchitis. Urine: Negative. Blood: B. P., 130 to 172, both systolic; R. B. C., 5,400,000; W. B. C., 6,800; Hgb., 85 per cent.; Wassermann negative.	M	72	5/12	5/20	O. D. Disk somewhat swollen, edematous and congested. Arteries and veins irregular in caliber; endarteritis; arteriovenous compression dilatation. Retina and macula edematous. O. S. Essentially the same as O. D. Pupils unequal. Reflexes absent.

the case when the age of the patient is considered. The one instance in which this factor was least noticeable was Case 5, Series B; even this case showed a blood pressure from 168 to 142 mm. in a man of 50. Marked swelling of the disk of 1 D. or more in two cases of interstitial nephritis showed retarded phenolsulphonephthalein elimination with an excess of blood urea, a marked feature in Case 23. In the chronic nephritis cases showing swelling of the disk, the white blood cells were increased in the cases in which a blood count was made, though this feature was not so dent on the etiology of the kidney lesion, metabolic or blood toxic. In one case of hypertension in which there was some evidence of nephritis, arteriosclerotic type, the disk in one eye was swollen 1 D., elimination low limit of normal, blood pressure high.

Periarteritis was nearly twice as frequent in chronic nephritis as in interstitial, but why it should also be twice as frequent in hypertension as in interstitial is not easily explained.

Endarteritis was least frequent in acute nephritis, and equally infrequent in the other nephritic cases.

TABLE 6 (SUMMARY OF TABLES 1-5).—IMPORTANT FUNDUS LESIONS AND THE DIFFERENT TYPES OF CONSTITUTIONAL DISEASES GROUPED FOR COMPARISON

	Ocular Totals		A. Chronic Interstitial Nephritis		D. Hypertension		B. Chronic Nephritis		C. Acute Nephritis		E. Miscellaneous	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
Total cases	73	100	30	41	13	17.8	18	24.7	5	6.9	7	9.6
Male	49	67	25	83.3	6	46	12	66.7	2	40	4	57
Female	24	33	5	16.7	7	54	6	33.3	3	60	3	43
Average age, years	49	....	54	....	57	....	41	....	22	....	52	....
Edema of the disk, retina or macula	68	93	29	96.7	13	100	16	88.8	4	80	6	85.7
Congestion or slight swelling of the disk	29	39.7	11	36.6	6	46	7	39	4	80	1	14
Swelling of disk 1 D. or more	11	15	6	20	1	7.7	4	22	0	....	0	....
Periarteritis	24	33	7	23	6	46	8	44	1	20	2	28.5
Endarteritis	51	70	20	66.6	10	77	12	66.6	3	60	6	85.7
Irregular tortuous or contracted arteries	45	61.6	23	76.6	8	61.5	8	44	3	60	3	42.8
Silver wire arteries	12	16.4	9	30	2	15	1	5.5	0	....	0	....
Corkscrew vessels	7	9.6	3	10	1	7.7	3	16.6	0	....	0	....
Arteriovenous compression with or without dilatation	51	70	23	76.6	9	69	10	55.5	3	60	7	100
Veins, irregular, engorged or tortuous	48	65.7	16	53	12	92	11	61	5	100	4	57
Periphlebitis	12	16.4	3	10	3	23	5	27.7	1	20	0	....
Venous thrombosis	1	1.3	0	....	1	7.7	0	....	0	....	0	....
Hemorrhages	39	53.4	22	73.3	7	54	9	50	0	....	1	14
Exudates and other retinal changes	23	31.5	12	40	6	46	3	16.6	0	....	2	28.5
Retinal detachment	4	5.4	1* 1†	6.6	2	15	0	....	0	....	0	....
Radiating or star-shaped macular changes	5	6.8	1	3.3	0	....	4	22	0	....	0	....
Other macular changes	22	30	13	43.3	6	46	2	11	0	....	1	14
Choroidal changes	15	20	6	20	2	15	4	22	0	....	3	42.8
Aneurysmal dilations and varicosities	3	4	1	3.3	2	15	0	....	0	....	0	....
Atrophic characteristics	25	34	10	33	6	46	7	39	0	....	2	28.5
Inflammatory characteristics	30	41	15	50	6	46	7	39	0	....	2	28.5

* Double. † Single.

noticeable in the interstitial type. In the parenchymatous form elimination was retarded and blood urea increased in three cases, a marked feature in Case 10. Although in this case the swelling was not great, there were typical radiating macular changes. The marked neuroretinitis in Series B, Case 17, may have been due, of course, to cerebrospinal syphilis, but there were typical radiating macular changes.

Macular changes were present in all of the choked disk cases in parenchymatous nephritis and in three out of six cases of interstitial nephritis. Three out of four of the former were of the radiating type, and one of the latter. Swelling of the disk was more frequently associated with poor elimination, nephritic toxemia; on the other hand, macular changes were more degenerative in type, possibly in part dependent on the etiology of the kidney lesion, though they were relatively more frequent in the acute than in the chronic group. They are probably associated with the other vascular changes.

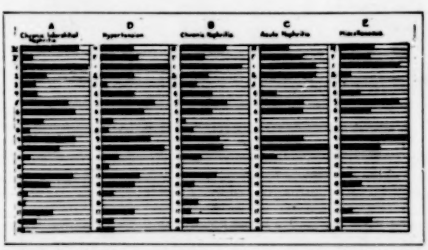

Chart 1.—Graphic representation of totals and percentages in Table 6. Each group represents the percentages of the features as they would appear in an equal number of cases: M, male; F, female; 1, edema of disk, retina or macula; 2, congestion or slight swelling of the disk; 3, swelling of disk 1 D. or more; 4, periarteritis; 5, endarteritis; 6, irregular tortuous arteries; 7, silver wire arteries; 8, corkscrew vessels; 9, arteriovenous compression; 10, e.gorged tortuous veins; 11, periphlebitis; 12, venous thrombosis; 13, hemorrhages; 14, exudates, etc., retina; 15, retinal detachment; 16, radiating macular changes; 17, other macular changes; 18, chloroidal changes; 19, ancurysmal changes.

It is not surprising that it should be more frequent in hypertension, as several of these cases showed evidence of general arteriosclerosis; that it should be so frequent in the miscellaneous cases is probably due to the fact that of these the first three cases showed high blood pressure; Case 4, rather advanced age; Case 5, syphilis; Case 6, degenerated kidney with low elimination, and Case 7, cerebral arteriosclerosis.

Tortuous or contracted arteries seem to have been mostly associated with high blood pressure, though they were relatively more frequent in the acute than in the chronic group. They are probably associated with the other vascular changes.

Silver wire arteries seem to be a feature of a late stage of interstitial nephritis, 30 per cent.; they were present in 15 per cent. of cases of hypertension. They

may be dependent on the cause of angiosclerosis rather than directly on increased blood pressure.

Corkscrew vessels in the macula were present in 10 per cent. of the interstitial and 16.6 per cent. of the chronic nephritis cases. They are probably due to long continued interference with the terminal circulation in the retinal vessels caused by the toxic substances present in the blood in nephritis rather than to increased blood pressure, for they were noted but once in the cases of hypertension and not at all in the other cases.

Arteriovenous compression was present to a marked degree, 70 per cent. Judging from its regular distribution throughout all five series, this feature would seem to be symptomatic of angiosclerosis rather than to be due to the poisons which cause the nephritis or the toxic substances resulting from the kidney lesions.

Venous tortuosities and irregularities were relatively most frequent in the acute cases, but they were present in 65.7 per cent. of all, and in 92 per cent. of hypertension cases. They are probably caused by both toxic retention and angiosclerotic changes. The same observation might be made with regard to periphlebitis, though it was relatively quite infrequent.

Hemorrhages were present in 53.4 per cent. of all cases. Interstitial nephritis showed hemorrhages in 73.3 per cent.; hypertension and chronic nephritis in 54 and 50 per cent., respectively. They were absent in the acute cases and present in a case of chronic bronchitis — Series E, Case 4. In this case, although the blood pressure was only 135 mm. of mercury, and the urine was normal, there were distinct evidences of retinal angiosclerosis in the eye in which the hemorrhage occurred. This case was the only one in the series having a low blood pressure. In all the other cases of retinal hemorrhage, increased blood pressure was a prominent feature, excepting in some of the cases of chronic nephritis. Retarded or markedly deficient elimination was present in 70 per cent. of cases showing hemorrhages. They were more frequent in cases having a large amount of albumin than in those showing a small amount, in the ratio of 4:9.

Retinal detachment was present only in interstitial nephritis and hypertension. In one case the detachment was bilateral and rather extensive; in the other cases the detachment was small, and occurred in only one eye. All these cases showed a distinctly high blood pressure. In the two detachment cases in which the elimination test was made, Cases 3 and 6, Series D, the result gave the low limit of normal.

Macular changes were mentioned in connection with the cases of severe optic neuritis; there remain, however, a few interesting features. The radiating type so commonly mentioned as characteristic of nephritis was present in only 6.8 per cent. of all cases. Of these, it was present in 22 per cent. of the chronic nephritis cases, and in only one, or 3.3 per cent. of the interstitial nephritis cases. In the latter case, Series A,

TABLE 7.—PREDOMINATING RETINAL LESIONS

As Associated with the Following Laboratory Findings Relating to the General Disease:	High Blood Pressure	Moderate Blood Pressure	Normal or Nearly Normal Blood Pressure	Slow Elimination	Normal or Fair Elimination	Amount Albumin Moderate or Large	Amount of Albumin Small or Absent	Low Red Blood Cell Count	High White Blood Cell Count
Number of cases of each feature (in boldface)	53	8	5	21	16	31	35	19	13
A. Chronic interstitial nephritis, 30 cases	30	0	0	7	7	15	15	11	5
Congestion or slight swelling of disk	11	..	..	4	2	3	4	2	..
Swelling of disk 1 D. or more	6	..	..	2	..	6	..	3	..
Arterial changes and tortuosities	20	..	..	5	6	15	13	11	4
Silver wire and corkscrew arteries	9	..	..	3	2	3	7	5	2
Arteriovenous compression	23	..	..	5	6	9	12	6	3
Changes or tortuosities in veins	16	..	..	2	5	9	8	5	2
Hemorrhages	22	..	..	5	4	10	4	9	2
Exudates and other retinal changes	8	..	..	2	2	5	6	2	1
Radiating macular changes	1	..	..	..	..	1	..	1	..
Other macular changes	13	..	..	5	1	5	6	6	1
D. Hypertension, 13 cases	12	1	0	3	4	2	11	1	0
Congestion or slight swelling of disk	4	..	..	2	1	2	2	..	..
Swelling of disk 1 D. or more	1	..	..	..	..	..	..	..	..
Arterial changes and tortuosities	9	1	..	2	4	1	10	1	..
Silver wire and corkscrew arteries	4	1	..	1	..	1	2	..	..
Arteriovenous compression	5	1	..	2	3	2	8	..	..
Changes or tortuosities in veins	6	1	..	3	3	2	9	1	..
Hemorrhages	7	..	..	1	2	2	4	..	..
Exudates and other retinal changes	6	..	..	..	4	..	5	..	..
Radiating macular changes	..	..	..	..	..	..	..	..	..
Other macular changes	6	1	..	..	..	1	2	..	..
B. Chronic nephritis, 18 cases	10	7	1	9	4	12	6	7	5
Congestion or slight swelling of disk	3	2	..	2	1	3	2	1	1
Swelling of disk 1 D. or more	2	2	..	4	1	2	2	2	2
Arterial changes and tortuosities	9	5	1	6	2	11	6	7	4
Silver wire and corkscrew arteries	1	2	..	2	1	1	2	2	2
Arteriovenous compression	6	2	1	6	2	6	5	6	3
Changes or tortuosities in veins	6	2	1	6	2	6	5	5	3
Hemorrhages	5	4	..	5	2	6	3	4	3
Exudates and other retinal changes	1	2	..	2	..	2	2	1	1
Radiating macular changes	2	2	..	2	..	3	1	1	1
Other macular changes	2	1	..	2	1	2	1	1	1
C. Acute nephritis, 5 cases	1	0	4	2	1	2	3	0	3
Congestion or slight swelling of disk	..	..	2	..	..	1	2	..	2
Swelling of the disk 1 D. or more	..	..	..	..	..	..	..	..	..
Arterial changes and tortuosities	1	..	4	2	1	2	3	..	2
Silver wire and corkscrew arteries	..	..	..	..	..	..	..	..	..
Arteriovenous compression	..	..	2	1	1	1	2	..	2
Changes or tortuosities in veins	1	..	4	2	1	2	3	..	2
Hemorrhages	..	..	..	..	..	..	..	..	..
Exudates and other retinal changes	..	..	..	..	..	..	..	..	..
Radiating macular changes	..	..	..	..	..	..	..	..	..
Other macular changes	..	..	..	..	..	..	..	..	..

Case 14, the blood pressure was high, elimination retarded, blood urea increased. In two of the cases found in chronic nephritis there was high blood pressure; three showed marked swelling of the disk; in the fourth the disk was congested. Elimination was low and blood urea increased or high in the cases in which this test was made. Radiating macular changes may therefore be said to be nephritic toxic with high blood pressure and angiosclerotic changes uniformly present.

Other macular changes were found to be the most prevalent in interstitial nephritis, 43.3 per cent., and in hypertension, 46 per cent. They were a feature of 11 per cent. of chronic nephritis. In the interstitial type, high blood pressure was present in every case of a typical macular change. The majority of these cases in which these tests were made showed low elimination and high blood urea. From these cases it would seem that as regards etiology, both radiating macular changes and atypical macular changes are nephritic toxic and angiosclerotic, associated with high blood pressure, but that the former are more common in chronic nephritis, while the latter are more common in interstitial nephritis and hypertension.

The choroidal changes noted are not easy to account for, but as they were more prevalent in interstitial nephritis and hypertension, they are probably angiosclerotic in origin, though a definite sclerosis of the choroidal vessels was made out in but one case, one of interstitial nephritis. They were noted in three of the cases in Series E, where they seem to have been associated with no particular type of lesion.

The thirty cases showing changes of an inflammatory type include the cases of optic neuritis, exudative retinitis, macular exudates, etc. They seem to have considerable relation to a retarded elimination, increased blood urea, and frequently to an increase in the white blood cells.

Atrophic changes apparently have less significance than inflammatory changes, and are more difficult to explain in these groups. In the main they were associated with high blood pressure and fairly good elimi-

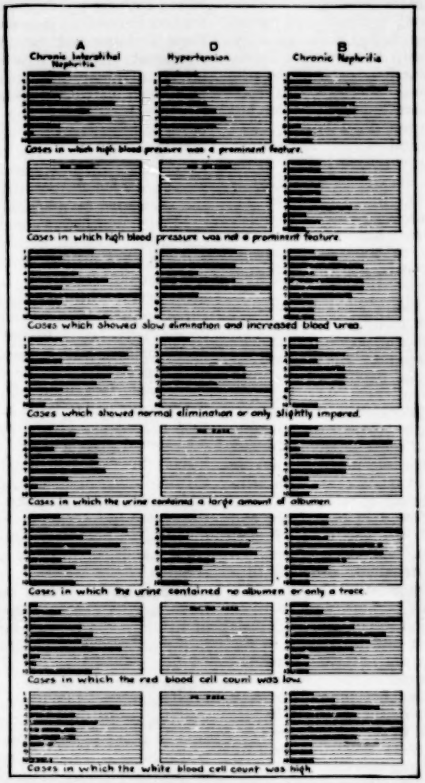
A
Chronic Interstitial Nephritis
D
Hypertension
B
Chronic Nephritis
Cases in which high blood pressure was a prominent feature.
Cases in which high blood pressure was not a prominent feature.
Cases which showed slow elimination and increased blood urea.
Cases which showed normal elimination or only slightly impaired.
Cases in which the urine contained a large amount of albumen.
Cases in which the urine contained no albumen or only a trace.
Cases in which the red blood cell count was low.
Cases in which the white blood cell count was high.

Chart 2.—Graphic representation of totals and percentages in Table 7. Each group represents the percentages as they would appear in an equal number of cases, the grouping being based on the laboratory findings in the general examination instead of the diagnosis: 1, congestion or slight swelling of disk; 2, swelling of disk 1 D. or more; 3, arterial changes and tortuosities; 4, silver wire and corkscrew arteries; 5, arteriovenous compression; 6, changes or tortuosities in the veins; 7, hemorrhages; 8, exudates and other retinal changes; 9, radiating macular changes; 10, other macular changes.

As far as this series goes aneurysmal dilatations appear most frequently in cases of angiosclerosis with hypertension.

Table 7 and Chart 2 were made for the purpose of showing the relation between the more prominent laboratory features of the different types of nephritis and the more common or characteristic fundus lesions found in each type. Inasmuch as edema was so generally present, it was not thought best to take up this feature in Table 7. Choroidal changes are found in such a large number of general conditions that they hardly seem to be a distinctive feature of nephritis; they are also omitted. The remaining eighteen findings are combined under ten headings and placed under the captions of Series A, B, C and D. Next the ophthalmoscopic features of these subdivisions are correlated to the most interesting laboratory findings.

The number of acute cases presented in this series is far too small to warrant definite conclusions being drawn; in the cases examined, however, there were almost no lesions other than edema and slight vascular changes. The diagnostic or prognostic value of such ophthalmoscopic findings seems to be very slight.

In the cases of interstitial nephritis the serious retinal changes seen in high blood pressure are numerous and significant, and the fact that these are, to a large extent, dependent on angiosclerosis seems to be established by the occurrence of these lesions in much the same relative frequency in hypertension. The much smaller percentage, 55.5, of high blood pressure in the cases of chronic nephritis is worthy of notice, especially when we find nearly as large a percentage of serious retinal lesions in the seven cases having moderately increased blood pressure. In the one case of chronic nephritis having a nearly normal blood pressure the lesions were practically the same as those seen in acute nephritis, which is also a fact in the one case of moderately increased blood pressure in Series D, hypertension, with the single exception of a silver wire artery observed in this case. These facts

support the belief that many of the serious fundus lesions of nephritis are, in part at least, dependent on some other factor than angiosclerosis.

Pursuing this subject further, the striking fact appears that three out of four cases of so-called choked disk were seen in chronic nephritis with slow elimination, while but two out of six similar cases, marked swelling of the disk, were seen in slow elimination in interstitial nephritis, and none in hypertension. A similar distribution of fundus lesions in chronic nephritis appears in cases showing slow elimination; less than one fourth of Series B had normal or fair elimination, and if one choked disk, one silver wire artery and two cases with hemorrhagic lesions may be excepted, good elimination seems to be protective of the fundus in chronic nephritis. In interstitial nephritis good elimination appears to offer less protection, for there were seven cases in each class, that is, in slow elimination and normal elimination, and there were nearly as many retinal lesions in the one as in the other, although the lesions were slightly more numerous in the cases in which elimination was slow; for example, there were two cases of choked disk and nearly twice as many hemorrhages in the latter condition, which goes to show that even in angiosclerotic cases, toxemia often plays a significant part.

From the standpoint of the amount of albumin found in the urine, there are in interstitial nephritis fifteen cases in which the amount was large, and an equal number with a small amount. All the cases of choked disk found in interstitial nephritis were present in cases in which the albumin was in large amount. The silver wire and corkscrew arteries were more numerous with a small amount of albumin, while hemorrhages were much more numerous where the amount was large. In chronic nephritis, on the other hand, there were twice as many cases with hemorrhages having a large amount of albumin. Two cases of choked disk were found in both large and small amounts of albumin. Of the other fundus lesions found in albuminuria, hemorrhages seem to have been about equally distributed, although they were relatively a little more frequent in small amounts of albumin than in large; this perhaps goes to show that when considered in relation to both angiosclerosis and slow elimination, toxemia and its results in the production of fundus lesions are not closely related to the amount of albumin found in the urine in any given case. Albuminuria does not appear to have had much if any significance in the cases f hypertension, and almost none at all in the acute cases seen.

Low red blood cell count, as indicating relative anemia, is of more than passing interest. Three of the six cases of choked disk in interstitial nephritis, two of the four cases of choked disk in chronic nephritis, 50 per cent. of each, showed this feature; silver wire arteries and hemorrhages were also, though in less striking degree, features of low red blood cell count. The one case of relative anemia in hypertension showed nothing striking.

Only five cases of interstitial nephritis, 16.7 per cent., showed an increased white blood cell count. The lesions seen in this series could all be attributed to angiosclerosis. On the other hand, there were five cases of chronic nephritis, 27.7 per cent., having a high white blood cell count. Choked disk appears here in two cases, 50 per cent. of the cases found in chronic nephritis. Silver wire or corkscrew arteries were also relatively numerous, though there was but one case showing hemorrhages. Three out of the five cases of acute nephritis had a relatively high white blood cell count: there were no cases of relatively low blood red cell count in this series. There seemed to be no relation between either the red or white blood cell count and the ophthalmoscopic features of acute nephritis.

The relation between the histopathology of the renal lesions of nephritis and that of the fundus lesions found with the ophthalmoscope in nephritis and hypertension is quite as interesting as the relation between these findings and the features of nephritis already discussed. In each case we have an organ made up largely of highly differentiated epithelial cells, differing widely as to embryologic origin, but each bound together by a supporting framework, and each having a rich and peculiar type of vascular organization and blood supply.[2] As in diseases of the kidney, so in diseases of the retina, the changes which take place are of a degenerative type, often dependent on the associated or preceding vascular changes.

Edema, which was common to all classes and almost constantly present, occurs in the earliest stages of retinitis as a diffuse edema affecting the disk, retina and macula. It gives rise to a watery haziness or opalescence, with increase in the retinal depth as measured by the ophthalmoscopic parallax. Later, localized edema may occur in the retinal substance forming cystic spaces, which may become filled with hyalin or fat derived from the degenerating arterioles with subsequent formation of cholesterin crystals. When the spaces become large and distended, they may rupture externally, giving rise to subretinal fluid with detachment. As a result of the pressure, edema and intracystic exudate, the nerve elements degenerate, the fluid filling the spaces changes to hyalin, and more or less well defined white spots or areas develop. In the severe types, endothelial leukocytes may penetrate the hyaloid boundary and lead to the formation of white bands, or in more severe cases to proliferating retinitis.[3]

The vascular changes on which the retinal changes, to so large a degree, depend, are generally the result of hyalin necrosis with fat formation due to changes in the intima. Endarteritis is followed later by deposits of lime salts in the necrotic areas of the intima. The perivascular changes are due either to albuminous exudate followed by hyalin deposits in the perivascular sheaths, or to a peculiar type of hyalin degeneration seen in other parts of the central nervous system, in which there is deposited around the wall of the artery minute droplets of hyalin which fuses to form a complete sheath for the vessel; the cause of this formation is not known; calcification often occurs.[4] Hemorrhages when small may undergo complete absorption through the activity of the endothelial leukocytes. If large, the blood pigment may be partially absorbed through the same means, while fatty degeneration of the coagula followed by cholesterin formation and the development of cystoid spaces, with hyalin and other changes, may lead to permanent white patches more or less associated with unabsorbed irregularly arranged blood pigment.[3]

2. Although the choroid is not a part of the retina, it is the source of nutrition for the outer retinal layer.
3. Parsons: Pathology of the Eye, iv, 1298.
4. Mallory: Principles of Pathology and Histology, p. 444.

Leaving the retinal side of the picture and turning to the kidney lesions, we find here also that vascular changes are frequently the predominating feature of the several forms of the disease, with, in addition, the peculiar degenerative processes which take place in the various tubules. Here too we see hyalin and fatty changes in the vessel walls, and in addition, in the epithelial cells of the tubules. While amyloid appears in the vessel walls, I find no mention of its appearance in retinal disease; as amyloid, however, appears to lead to hyalin thickening with gradual occlusion of the vessel lumen, it might be found in the retina also in cases in which an artery becomes obliterated. Amyloid appears first in the glomeruli and the smaller arterioles, and later forms around the tubules, leading to colloid and hyalin degeneration of the epithelium of the tubules.

In the toxic form of acute tubular nephritis, marked necrotic changes are seen in the epithelium of the tubules, associated with inflammatory reaction, lymphocyte infiltration, leukocyte migration, etc. Inasmuch as this type of cases was so nearly absent from the series under consideration, no retinal relation need be discussed; but inasmuch as similar changes sometimes take place in the heart and liver in toxic conditions, it seems not unlikely that the same definite relation may sometimes be established.

Toxic glomerular nephritis presents certain peculiar features in which we have (*a*) the capsular type with inflammatory exudates into the capsular space and degeneration of the capsular epithelium, or in some cases proliferation of the capsular epithelium, and (*b*) the intracapillary type in which the glomerular capillaries are involved, with intracapillary fibrin formation and the accumulation of leukocytes, without much epithelial involvement. Inasmuch as the types of glomerular nephritis are due to toxins which often have a general distribution, and as they are more or less of an inflammatory character, one might expect that an associated reaction in the retina would also take on an inflammatory character, as would be shown by neuroretinitis, papillitis, periarteritis, periphlebitis, exudates, etc. In the clinical classification of chronic nephritis, in which there were several cases showing toxemia, etc., inflammatory retinal changes appeared to be prominent features.

In chronic interstitial nephritis there is present endarteritis affecting the inner fibrous layer and the endothelium, such as occurs in the vessels in general arterial sclerosis. The necrotic process attacks the cells of the intima, particularly the fibroblasts, necrosis occurs, and the endothelial leukocytes are set free. When regeneration occurs there is an overproduction of new elements with consequent narrowing of the vessel. If the endothelial cells degenerate, fibrous thrombi may follow, leading to irregular thickening and localized occlusion of the vessel; secondary sclerosis and disappearance of glomeruli follows. When the occlusion is rapid, hemorrhage into the glomeruli may result. The vascular changes are followed by degeneration and atrophy of the renal epithelium, with contraction and apparent increase of the connective tissue elements.[5]

In the latter part of this paragraph the intimate relation between the destructive effects of the vascular degeneration in the kidney and in the retina can be forcibly expressed by substituting the words retinal elements or retina for glomeruli, and the same words for renal epithelium, as follows: secondary sclerosis and disappearance of the retinal elements follows. When occlusion is rapid, hemorrhage into the retina may result. The vascular changes are followed by degeneration and atrophy of the retinal elements. Note the relatively large number of features 13, 14, and 17, Chart 1, in chronic interstitial nephritis and hypertension.

5. Mallory: Principles of Pathology and Histology, p. 567.

ABSTRACT OF DISCUSSION

DR. ALBERT E. BULSON, Jr., Fort Wayne, Ind.: The fundus lesions that may accompany persistent high blood pressure and the various types of nephritis are due to the presence of toxic substances in the blood. The character and extent of the retinal lesions depends on the virulence of the toxic substances, the stage of the angiopathic disease, and the resistance offered by the vascular structures of the eye. In chronic Bright's disease we may find in the retina any or all of the changes resulting from vascular disease. In the class of cases characterized by edema, with abundant albuminuria and cylindruria, we are more apt to have marked hyperemia and exudation in the retina, whereas in cases with marked cardiovascular changes, relatively slight albuminuria and cylindruria, and abundant urine of low specific gravity, the retinal changes are more apt to be of the degenerative type, and present sclerosis of the arteries, full and tortuous veins, hemorrhages and atrophy. In the early stages of nearly all cases we have more or less hyperemia and exudation. The fundus changes in chronic Bright's disease are ophthalmoscopically indistinguishable from the vascular degenerative changes that may occur as a result of infection in scarlatina, measles, erysipelas, malaria, syphilis, and lead poisoning; and the ophthalmoscopic picture of so-called acute albuminuric retinitis is the same as that presented by the chronic form of retinitis in the exudative stage, but without the arteriosclerotic changes. Even the macular star or radiating exudates around the macula, formerly thought to be pathognomonic of Bright's disease, have been found in syphilis. It is suggested, therefore, that while the fundus changes in any case of symptomatic retinitis may suggest strongly the nature of the general disease, they cannot alone be considered as strictly diagnostic. Even the presence of albumin and casts in the urine is subject to great variation, and the existence of advanced nephritic changes may not be evidenced by the finding of either albumin and casts in one or even more samples of urine. It is in this latter class of cases that the retinal lesions, while in themselves suggestive of the underlying cause, must await the discovery of other clinical findings before becoming of diagnostic importance. The earliest lesions are not those embraced in the well known picture of albuminuric retinitis, but the less pronounced lesions which when made the basis of more extended study of the case lead to a diagnosis that may mean prolongation of the life of the patient. In the final analysis, therefore, the fundus lesions that we commonly see in angiopathic disease and described in connection with nephritic cases, even though strongly suggestive, are of diagnostic and even prognostic importance only when considered in connection with the history and other clinical findings, and the latter may require repeated chemical and microscopic examinations of the urine, repeated blood pressure findings, and exhaustive blood examinations.

DR. E. E. BLAAUW, Buffalo: Nephritis is not so much an anatomic study as a study of function. At present the viewpoint has reference to the retention of sodium chlorid, or the retention of urea in the blood stream, conditions entirely different from interstitial nephritis. The question of vascular disease should be entirely distinct from nephritis. With changes in the urine there may be changes in the kidney, but the etiologic factors are entirely different. In 125 cases we found only five cases of fundus changes, which shows that it needs a great many more cases to come to a percentage decision.

DR. EDWARD J. BERNSTEIN, Kalamazoo, Mich.: Will the author please explain what he means by hypertension, and by high blood pressure? Many of us are under the impression that hypertension means high blood pressure. I should like to ask how the author arrives at a differential diagnosis in nephritic troubles when there are neither casts nor albumin in the urine.

DR. G. E. DE SCHWEINITZ, Philadelphia: It is worth while to emphasize that the so-called diagnostic or characteristic eyeground of nephritis is not really a characteristic eyeground. I believe that there is a period in the progress of nephritis which we may call what the French speak of as the incidence of nephritis. It consists in a curious change in the nerve head. It is important also to emphasize the fact that we are not yet prepared to speak of the diagnostic eyeground in relation to the clinical symptomatology. Because a man has some retinal changes he must not be condemned to death in one year or eighteen months. He may die within such period after changes have been found with the ophthalmoscope, but not necessarily so. Under modern treatment prolongation of life to many months and even years is possible.

DR. S. D. RISLEY, Philadelphia: We should speak of these retinal changes as being a toxic retinitis instead of a nephritic retinitis, because these same changes are present in kidney disease and other toxic affections. They may be associated with cardiovascular disease which is associated with kidney affections and with other nutritional diseases. It is a very rare case of glycosuria in which we do not find this toxic retinitis present.

DR. EDWARD JACKSON, Denver: Conservatism in prognosis is a good thing to cultivate. A case in point is that of a man with very marked instability of the nervous system, vascular retinal changes, typical, as we supposed, of high blood pressure. He took up golf and has devoted two or three afternoons every week to it, where he had done nothing of the kind before. He has been under my observation some six years and prognosis from a retinal examination today would be entirely favorable. Another case typical of vascular change happened in a woman of 60. That patient lived without any particular change of habits for over six years, with gradual deterioration of vision but with not much other change that could be connected with the retinal condition. A third case is that of a medical friend who accidentally, in good health, discovered that he had a systolic blood pressure of 235 mm. He has been able to reduce it to 180. He is comparatively young—under 40. He has changed his method of life largely, but continues in good health, and with very little change in his retinal vessels.

DR. WALTER R. PARKER, Detroit: One interesting fact elicited by this work was the relation of the swelling of the nerve in every case to, or its association with, faulty elimination. No matter where we classify it, we have faulty elimination when there is swelling in the retina and in the nerve head.

DR. GEORGE SLOCUM, Ann Arbor, Mich.: We classify diseases by the grouping of symptoms as based on clinical observation. A patient with chronic interstitial nephritis will live to be old. Patients with chronic nephritis with large white kidney seldom live to be old. Of course no case of chronic nephritis exists a long time without vascular changes. We must always await the laboratory diagnosis in the great class of cases. No internist makes a diagnosis of nephritis, or even of the type of nephritis, until he has made a careful study of his laboratory findings; not from one examination, but a series of examinations.

As to what is hypertension as contrasted with high blood pressure, if we have high blood pressure existing by itself, with no other discoverable predominating feature, I understand it has been the custom in the clinic to diagnose hypertension; otherwise the case was diagnosed according to the features found by laboratory study. As to how to make a differential diagnosis in the various forms of nephritis when neither casts nor albumin are present, I am unable to answer that question. Inasmuch as these cases were diagnosed in the clinic of internal medicine, I did not think it necessary to go into the diagnosis. One point you will note, that the only ophthalmoscopic feature that appeared in the nephritis cases was radiating macular changes. In our clinic a number of years ago we had a case of radiating macular figure as typical as could be, and at last report the patient was alive and well. There were no laboratory findings; at least, no nephritis was present in this case, but it was striking that the radiating macular figure was present in one eye only. Other cases of similar type have appeared, but as to their subsequent histories I am not informed.

PARENCHYMATOUS DISEASE OF THE LIVER A CAUSE FOR RISE IN PORTAL BLOOD PRESSURE

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In attempting an explanation for ascites in hepatic cirrhosis, we must consider the blood pressure and minute volume of flow in the aorta and cava. If the pressure and flow of blood in the aorta and cava are unchanged, then obviously the only hydraulic considerations are those which may affect blood pressure within the portal vein.

There is an abundance of evidence from pathologic sources to prove that ascites may be caused by stenosis of the portal trunk from pylephlebitis. In many instances of hepatic syphilis, ascites is due solely to this source. If the portal pressure is gradually raised during a long period of time, anastomoses form which may be sufficient to keep the portal pressure sufficiently low to prevent ascitic accumulations. But these factors alone are not sufficient to explain why some cirrhoses of the liver are attended with ascites and others are not, when the entire group of ascitic cases are uncomplicated with disease of the radicles, trunk or large branches of the portal vein. Pathologic histology fails to explain why only one of two cirrhotic livers may produce ascites. So far as gross appearances and histologic findings go, we lack an explanation for ascites in the amount and distribution of fibrous tissue throughout the liver.

From our clinical experiences in the study of pylephlebitis and portal anastomoses with tributaries to the cava, it seems clear that a rise in pressure in the portal vein must precede ascites. Here, however, we encounter experiences which are very disconcerting to this view of ascites if we see in a rise of portal vein pressure only an expression of obstruction to the portal flow from fibrous tissue formation. Every clinician sees patients with typical alcoholic cirrhosis who will have ascites which accumulates very rapidly. The ascitic fluid is drawn off one or more times, and, in spite of the fact that there is no demonstrable change in the hepatic signs, the patient will live for some years without a return of ascites.

There is then some temporary alteration in the liver which causes ascites. Thus far I have never read of any direct evidence which goes to prove that these transient periods of ascites are dependent on a coincidentally transient rise in portal pressure. The rise in portal pressure with its consequent ascites cannot bear any relation to fibrous tissue formation. The cause must lie in some other source of resistance to the portal flow of blood.

The portal cirrhosis in cases of this kind proceeds uninterruptedly, and the source for increased portal pressure and ascites must obviously be sought else-

where than in the cirrhotic process. F. C. Herrick[1] made a comparative study of the minute-volume flow through the portal vein and hepatic artery in normal livers and in the livers of interstitial hepatitis removed at necropsy. Herrick found that interstitial hepatitis did not cause any obstruction to the flow of normal salt solution or defibrinated blood. Perfusion of the portal vein of cirrhotic livers gave as large a minute-volume flow as that procured from perfusion of normal livers. He did not find, however, that the anatomic interrelation between portal vein branches and hepatic arterial branches was very different in cirrhotic livers from the interrelation between the vein and artery of normal livers. In cirrhotic livers the portal pressure rose much higher under the influence of elevated pressure in the hepatic artery than it did in normal livers.

Herrick's experiments show that there is a different relation between the hepatic arterial branches of the portal vein from that which exists normally. But what vitiates the significance of his results is the fact that the minute-volume flow through the hepatic artery in Herrick's dead livers was in all cases greater than the minute-volume flow through the portal vein. In life the reverse is true, the minute-volume flow through the portal vein being twice as large as the arterial minute-volume. This disparity between the results of postmortem perfusion and the measurements of minute-volume blood flow in vivo can be accounted for by a loss of vasomotor arterial tone in the dead livers. In the portal vein, however, the vasomotor supply to the intrahepatic branches is very feeble. Although Herrick does not offer a satisfactory explanation for the portal vein pressure in hepatic cirrhosis, he does show that the interstitial fibrous tissue of a portal cirrhosis will not account for an elevation in pressure within the portal vein.

The state of the liver cells and edema of the liver have been neglected in considering the causes for rise of the portal pressure in hepatic cirrhosis.

The clinical histories of hepatic cirrhosis contain periods of subacute exacerbations of symptoms from the biliary and portal systems, for example, transient cholemia with transient ascites. During these subacute exacerbations the liver increases much in size and becomes tender to pressure. As cholemia and ascites subside, the liver grows smaller and is no longer sensitive to pressure. There has always been a lack in the chain of evidence, however, to prove that these transient ascites are really associated with an elevation of pressure in the portal vein.

We recently had in our wards at Lakeside Hospital a patient who supplies the wanting link in the chain of evidence to prove that these attacks of subacute parenchymatous hepatitis are actually accompanied by a rise in portal blood pressure.

REPORT OF CASE

CASE 1.—F. K., man, aged 35, had used alcoholics in excess during his adult life. Three weeks before he was admitted to the hospital he noticed that his feet, legs and abdomen were swollen. He stopped work and quit drinking alcoholics for a few days and the swelling disappeared, whereupon he resumed work and also the use of beer and whisky. Ten days before entering the hospital the swelling in his lower extremities and abdomen returned, and he became jaundiced for the first time.

When admitted to the hospital, the patient was jaundiced, there was edema of the feet, legs and scrotum, and a great amount of ascitic fluid behind which a large hardened liver could be palpated a hand's breadth below the costal margin. There was no free fluid in the pleural or pericardial sacs, and there was not the slightest evidence to indicate any disturbance in the cardiovascular or pulmonary systems. The right auricle and left ventricle were not enlarged. The blood pressure was 130 systolic and 90 diastolic. The temperature was 102. The urine contained bile pigment and bile salts and a slight trace of albumin. In the sediment were a few hyaline and granular casts. There was a well developed caput medusae in the supra-umbilical region. Midway between the umbilicus and the ensiform cartilage to the left of the median line was a veritable bulbus venosus over which there was a palpable thrill and a loud venous hum.

Two days after entering the hospital the abdomen was tapped, and 8,000 c.c. of a clear yellow serum removed. The specific gravity was 1.005, albumin 4.5 gm. per liter, and there were 180 cells per cubic millimeter.

The cells were largely mononuclear. The blood was drawn from a vein into a 1 per cent. potassium oxalate solution and centrifuged. The plasma was deeply tinged with bile pigment, and when dialyzed from a collodion sack against equal parts of alcohol and water, the dialysate contained both bile pigment and bile salts. The plasma gave no reaction to the paraldehyd test for urobilin, but the urine contained an abundance of urobilin as well as both bile pigment and bile salts. The stool was dark colored and gave a reaction to urobilin which was still visible spectroscopically when the daily stool was diluted to 1 liter with water and a part of this mixture was again diluted 1:2,500 with water. The concentration of bile pigment in the plasma was much greater than in the ascitic fluid. The blue-green band between the coagulum and plasma which occurs when nitric acid is poured beneath the plasma was very marked, but when the nitric acid contact test was made on the ascitic fluid the color band was very faint. The patient's fever rose as high as 102 November 11, the day of admission. On November 12 and 13, the temperature rose as high as 103 and 100, respectively. The blood contained 5,180,000 red blood corpuscles, 6,400 white blood corpuscles, and hemoglobin 85 per cent. (Tallqvist).

Between November 13 and 22 the temperature declined to normal and remained normal for the remaining four days that the patient was in the hospital.

Several notable things occurred during the interval between November 13 and 22. The venous hum over the caput medusae was unaffected by the removal of the ascitic fluid. It was quite as loud after the intra-abdominal pressure was relieved as it was before the tapping; but by November 22, nine days after the tapping, the murmur and thrill over the caput medusae were gone, although the venous anastomoses were as plainly visible as before. In the interval of nine days above referred to, the ascites entirely disappeared. The liver grew much smaller. The liver border ascended three finger breadths so that the lower sharp edge was palpable only about an inch below the costal margin at the nipple line. The left and right lobes of the liver diminished proportionately in size, and all liver tenderness was gone. After the third day, there were no longer any casts or albumin in the urine. All these changes occurred independently of any alteration in the size of the heart or change in blood pressure in the aortic system. November 17 the urine still contained bile salts and bile pigment, but the urobilin content of the stool was enormously increased, as the retention of bile in the blood had ceased and a marked hypercholia was instituted as the liver began to eliminate the large amount of bile and bile salts which had accumulated in the blood. The patient was greatly improved in all symptoms, and the stool showed the test for urobilin in dilutions of 1:44,600, whereas on entrance the test showed only in dilutions as high as 1:2,500. The patient was evidently recovering from his acute hepatitis, and the liver was recovering its biliary function. November 22, nine days after admission, the urine no longer contained bile salts or bile pigment, nor were there any biliary elements found in the urine during the remainder of his stay in the hospital, which terminated November 26.

1. Herrick, F. C.: Jour. Exper. Med., 1907, ix, 93.

November 26, the murmur and thrill over the caput medusae were gone, and there was no free fluid in the abdomen or edema elsewhere in the body. The liver was much diminished in size. The jaundice was much less marked, there was no choluria, and the oxalate plasma showed a great diminution in the cholemia. There was still sufficient bile pigment to give the nitric acid contact test, and the dialysate from the plasma gave Hammarsten's test for bile pigment; but Pettenkofer's test for bile salts in the plasma dialysate was negative.

COMMENT

In the size of the liver, the improvement in the cholemia and recovery from choluria, and the great intestinal hypercholia and recovery from ascites, we have the clinical picture of recovery from a subacute hepatitis. Coincidentally with this improvement, the murmur and thrill in the caput medusae disappeared. The murmur in the caput medusae is due to two factors, namely, the conformation of the venous channel and the velocity of the blood stream. The character of the blood was unchanged, and the conformation of the veins remained the same; the only change was in the velocity of the blood in the anastomotic veins. The velocity of the blood in this location was an expression of the disparity between the pressure in the portal vein and in the superior vena cava. It indicated the transit of blood from a field of high pressure to a field of low pressure. When the portal pressure diminished with recovery from subacute hepatitis, the disparity between the portal vein and cava pressures grew less and the velocity of the venous current diminished sufficiently to make the thrill and murmur disappear. The effect of posture on the venous hum at the bulbus venosus in the right supraclavicular region illustrates with what delicacy the critical point of velocity in the venous stream is determined at which a murmur will develop.

If a patient who has a venous hum of anemia sits upright, the hum will be loud at the bulbus venosus. If the patient is slowly let down from the upright toward the recumbent position, an angle of inclination will be found at which the murmur ceases. If the patient sits upright, the murmur is very loud in a given instance. When the patient is let down toward the horizontal position, the murmur will still be loud when the trunk forms an angle of 35 degrees with the bed. If he is let down further so that the trunk forms an angle of 30 degrees with the bed, the murmur is no longer audible. The angle at which the murmur will disappear varies in different cases, but in all cases the critical point at which the murmur disappears is sharply defined. The transition from a loud murmur to silence over the bulbus venosus occurs within a change in inclination of the body of a very few degrees. In nearly all cases of anemia, the murmur ceases before the patient reaches the horizontal position. I have found only two exceptions to this rule, and they were both in patients who had anemia due to lead poisoning and who, in addition to their anemia, had an elevation of systolic and diastolic blood pressures, due to hypertonus of the splanchnic arteries. In both these cases the murmur was still loud when the patients were in the horizontal position. The murmur did not disappear until the foot of the bed was elevated about 2 feet from the floor. This of course involves the question of minute-volume flow through the encephalon attending splanchnic arterial hypertonus. However this may be, the observations prove that employment of gravity shows how delicately the velocity of the venous current determines the appearance or disappearance of the venous hum.

To return to our cirrhotic liver patients: In the caput medusae there was a loud venous hum and palpable thrill before and after the ascitic fluid was withdrawn; without any alteration in the hydraulics of the systemic blood flow, the murmur disappeared coincidentally with recovery from the subacute parenchymatous hepatitis, and furthermore, after recovery from all the signs of acute hepatitis, there was no return of the ascites. It seems, therefore, that we have very good proof that subacute parenchymatous hepatitis in the course of chronic interstitial alcoholic cirrhosis may cause sufficient elevation in portal blood pressure to produce a large ascitic accumulation which does not reaccumulate when the portal pressure is lowered.

In Case 1, the liver was enlarged and sensitive. The tenderness on pressure was due to the bursting tension of Glisson's capsule and not to perihepatitis. The liver was equally sensitive over the entire breadth of the right and left lobes, and there was no perihepatic friction palpable or audible. The ascitic fluid had all the characteristics of a transudate.

In Case 2, there was an acute afebrile disease of the liver accompanied by ascites and intense jaundice and attended with grave signs of intoxication ascribable to impairment of hepatic function; but, during the height of the disease, the consistency of the liver was diminished and there is evidence to show that the tension of Glisson's capsule was less than normal during the period in which ascites accumulated.

REPORT OF CASE

CASE 2.—A man, aged 21, admitted to Lakeside Hospital Oct. 12, 1911, and discharged Dec. 19, 1911, had been observed to have jaundice two weeks prior to admission. The patient was confined to bed only one week before he was brought to the hospital. On admission there was intense jaundice, an abundance of bile in the urine, and the stools showed no indication of a want of bile. The pulse was 52. The heart was not enlarged; the systolic arterial pressure was 130, and the diastolic pressure 90. The temperature was 98. The liver was enlarged and slightly sensitive to pressure. The hepatic area of dulness in the nipple line extended from the fifth rib to 3 cm. below the costal margin. The hepatic edge was easily palpated, and the liver was sensitive to pressure. The spleen had an enlarged area of percussion dulness, but did not reach quite to the costal margin. The abdominal wall was rather firm, and did not admit palpation of the splenic border. The subsequent clinical course shows further progress in hepatic disease to the point where marked hypocholia, ascites, hemorrhages, acidosis and violent convulsions all developed. During this period there were no evidences of cardiac or renal impairment. Then followed signs of recovery with a transient increase of cholemia, which had subsided during the hypocholic period.

During the period of maximum severity of the disease, when hypocholia, hemorrhages, ascites and convulsions all developed, the liver diminished in consistency, and had a lowered tension of Glisson's capsule.

During the subsequent period of recovery, the liver regained its original size and consistency. In this case of acute hepatitis, ascites developed during a period of maximum hepatitis when the volume of the liver was apparently diminished and tension on Glisson's capsule was lessened, whereas in Case 1, ascites developed during a period of subacute hepatitis during which period the liver was enlarged and the tension on Glisson's capsule was evidently much increased.

The following are extracts from the bedside notes:

October 14: Test carbohydrate meal removed one hour after eating showed free hydrochloric acid 8, total acidity 38, benzidin reaction negative, lactic acid negative.

October 15: Stool light brown, no parasites or parasite eggs in the stool. No fat or blood cells. Urobilin present in abundance.

October 17: Vomited 400 c.c. after a meal of toast, oatmeal and milk. Acid to litmus. Hydrochloric acid deficit 24. Total acidity 59.

October 19: Although there is no abdominal distention from gas or meteorism, the hepatic area of dulness is much diminished and the liver is no longer palpable. The epigastrium is retracted. In the nipple line, there is hepatic dulness only from the sixth to the eighth ribs. From this point, the distance from the eighth rib to the costal border is 7 cm. In following the seventh interspace from the costal margin there is no hepatic dulness encountered until the anterior axillary line is reached. The liver seems to have fallen in on itself. It has receded from the boundaries of the abdominal wall and is no longer palpable.

Vomited coffee ground material. Free hydrochloric acid 12. Total acidity 50. Benzidin +++. Bile +.

October 21: Liver dulness the same. Splenic dulness 4.5 cm. above costal margin. No hemorrhage. Vomited once yesterday. Patient is stuporous.

November 3: Redness and swelling of left eardrum; bulging; lanced; serum discharged. Pain subsided November 2 and 3. There was an elevation of temperature to 100. The fever promptly subsided after the paracentesis was performed.

November 5: Free fluid demonstrable within abdominal cavity.

November 7: Three liters of serum removed by paracentesis of the abdomen. The fluid was bile stained, and slightly cloudy; specific gravity 1.009; no coagulation on standing; benzidin reaction negative; bile ++. The cells consisted of 80 per cent. mononuclear and 20 per cent. polynuclear. There were only 126 cells per cubic millimeter.

November 11: Twenty-four hour urine was collected: Total nitrogen 9.072 gm.; ammonia 1.242 gm.; urea 6.272 gm.; ammonia 13.6 per cent. of total nitrogen; urea 69.1 per cent. of total nitrogen.

November 15 to 17: All traces of bile have disappeared from the urine, nor did bile again appear in the urine.

November 22: There is a large amount of fluid in the abdomen. Jaundice has almost disappeared. The hepatic dulness has again returned, and the liver is now palpable at the costal border. The spleen is also palpable at the costal margin.

November 22: The patient had three violent epileptic convulsions during the day. From the following day the patient began to show signs of improvement.

December 8: Jaundice has returned. Liver palpable 1 inch below the costal margin. The spleen is at the costal margin.

December 19: Jaundice is no longer perceptible. The spleen is no longer palpable. No return of ascites.

Twenty-four hour urine on the day of discharge from hospital, December 19: amount 2,310 c.c.; ammonia 0.957 gm.; ammonia 5.04 per cent. of total nitrogen.

With the exception of two days when the patient had an otitis media there was no fever. There was never the slightest evidence of any renal disease, or cardiovascular impairment. The clinical picture was clearly that of an acute degenerative process in the liver. Although the large amount of ammonia eliminated in the urine at the time of the convulsions indicates an acidosis, there was no hyperpnea. The character of the ascitic fluid was decidedly that of a transudate.

COMMENT

It may justly be said that there is insufficient direct evidence of an elevation of portal pressure in the second case, but it was this experience which suggested one or two possible sources for the ascites, namely, either an elevation in portal pressure on account of an acute hepatitis, or merely a hydrops peritonei which happened to be the only collection of extravascular serum because of some modification of chemistry of the blood.

In the first case we were dealing with an old interstitial hepatitis which renders the liver inelastic. An acute toxic hepatitis causing an increase in the parenchymatous volume under such conditions would create a higher pressure within the enclosure of Glisson's capsule than would the same degree of parenchymatous enlargement when it occurs within the enclosure of a normal Glisson's capsule with normal and less resistant interstitial tissue.

The behavior of the audible hum and palpable thrill in the caput medusae in the first case is clear and direct evidence of elevation of portal pressure due to parenchymatous hepatitis in the presence of an old interstitial hepatitis.

In the second case, the evidence of the elevation of portal pressure due to parenchymatous hepatitis in a liver otherwise normal is inferential, but there are many experiences reported in perfusion of the liver which strongly suggest the possibility of some chemical source for this increase in resistance to portal blood flow.

The first case may be explained on the purely physical basis of parenchymatous enlargement within an unyielding capsule and interstitial framework of the liver, but the second case demands another explanation.

Whatever the cause may be in the second case, the two experiences show how important it is to consider the part parenchymatous disease of the liver may play in the diagnosis and treatment of ascites from hepatic origin.

PROTEOSE INTOXICATION

INTESTINAL OBSTRUCTION, PERITONITIS AND ACUTE PANCREATITIS *

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This communication deals with the etiology of the intoxication which develops in intestinal obstruction, general peritonitis and acute hemorrhagic pancreatitis. It has been demonstrated[1] that the intoxication of intestinal obstruction is due to a primary proteose which may be precipitated by five volumes of 95 per cent. alcohol or by half saturation with ammonium sulphate. It is comparatively easy to isolate the poison from closed loops of the intestine. This proteose is very toxic and 100 mg. may suffice to poison fatally a 15 pound dog.

Peritonitis and pancreatitis have some clinical features in common with acute intestinal obstruction. At times there may be some difficulties in differential diagnosis. We propose to show that the intoxication in these three conditions is due in large part to toxic proteoses. There may well be other substances concerned, but I believe that the proteose is the most important factor in the toxic reaction following peritonitis and pancreatitis.

It may be objected that when a toxic proteose is isolated from a closed loop of intestine this substance is not actually concerned in the intoxication. For example, it cannot be demonstrated in the blood. But when a toxic proteose is isolated from the exudate of a general peritonitis, no valid reason can be

* Read before the Association of American Physicians, Washington, D. C., May 9, 1916.
* From the George Williams Hooper Foundation for Medical Research, University of California Medical School.
1. Whipple, Rodenbaugh and Kilgore: Jour. Exper. Med., 1916, xxiii, 123.

given why this substance is not concerned in the associated intoxication. Absorption from the peritoneal cavity is known to be very rapid, and any soluble substance like a proteose will be absorbed into the blood stream with alacrity. We can show that a peritoneal exudate contains a toxic proteose which is precipitable by five volumes of 95 per cent. alcohol and closely resembles the proteose isolated from closed intestinal loops. It gives the same biologic reaction when injected into animals.

Further, it can be shown conclusively that this proteose is not due to bacterial activity, as a toxic proteose can be demonstrated in a sterile peritonitis caused by turpentine, aleuronat or bile. It seems safe to assume, therefore, that the proteose must be derived from the proteins of the host. In a general peritonitis due to bacteria the same proteose can be isolated, and it is logical to suppose that here too the proteose may be derived from the tissues or tissue proteins of the host.

A sterile hemorrhagic pancreatitis may be produced by the injection of bile into the pancreatic duct. The clinical picture of intoxication under these conditions is familiar and is very like that of acute intestinal obstruction. During the first twenty-four hours after the operation the animal may be killed, the pancreas rapidly ground up in water, the mixture centrifugalized and the supernatant fluid poured into five volumes of 95 per cent. alcohol. This precipitate contains much albumin which can be removed by heat in a faintly acid solution. The slightly opalescent filtrate can be concentrated and tested in animals to show the presence of a toxic proteose. The amount of proteose here is not great as compared with the amount in an intestinal obstruction, but this difference may be due to the great difference in rapidity of absorption. It is possible that the proteose is absorbed from the pancreas almost as rapidly as it is formed. Jobling[2] has brought indirect evidence to show that there is a proteose intoxication in acute pancreatitis.

Considerable data[3] has been published recently to show the rise in noncoagulable nitrogen of the blood in many conditions of intoxication, especially in acute intestinal obstruction. The noncoagulable nitrogen may rise from a level of 25 mg. per hundred c.c. of blood to 100 or even 200 mg. There is no lack of eliminative power in the kidneys to account for this. Acute proteose intoxications due to the injection of a pure proteose into a normal dog may show a rise in noncoagulable nitrogen from 25 mg. per hundred c.c. of blood to 40 or 60 mg. within three or four hours. A similar rise in blood noncoagulable nitrogen may be found in association with general peritonitis, whether sterile or septic, and acute hemorrhagic pancreatitis.

Experiments have been carried out to explain the rise in noncoagulable blood-nitrogen in these conditions — intestinal obstruction (including closed loops of intestine), general peritonitis and acute hemorrhagic pancreatitis — and also in pleurisy and abscess formation (Cooke, Stearns and Whipple, unpublished). Dogs kept in metabolism cages during starvation after four or five days show a constant urinary nitrogen elimination per twenty-four hours. If a small dose of pure proteose is given intravenously there will be a great increase in the urinary nitrogen elimination — perhaps much over 100 per cent. increase per day, and the increase lasts over three to five days. The greatest increase appears usually on the second day after injection and not during the first twenty-four hours as would be expected. This nitrogen must be derived from the tissues of the animal, and it is to be emphasized that the catabolism and increased elimination lasts for days. The rapid rise in blood noncoagulable nitrogen may last only a few hours following the injection and is usually best seen in fatal cases in which the tissue destruction is extreme. But all the evidence points to catabolism of the hosts' tissues due to the proteose intoxication as explaining the high nonprotein nitrogen of the blood.

In like manner, a dog on starvation with a uniform urinary nitrogen excretion will show a great rise in nitrogen elimination if a closed loop of intestine is produced. The rise may be much over 100 per cent. elimination in twenty-four hours, and may last many days. A certain type of simple duodenal obstruction can be produced with which there will be little or no vomiting and no dehydration. In such cases animals may show over 200 per cent. increase in urinary nitrogen elimination per twenty-four hours, and death in six or eight days may show a blood noncoagulable nitrogen well over 100 mg. per hundred c.c. of blood.

Similar experiments may be performed on dogs with uniform nitrogen excretion when a pancreatitis, peritonitis, pleurisy or sterile abscess has been produced. The same prompt rise in nitrogen elimination will follow the inflammation. It is not to be considered for a moment that this reaction means simply a disintegration of tissue at the site of inflammation and an elimination of the nitrogen from this tissue only. We are dealing with an increase of 2 or 3 gm. of nitrogen per twenty-four hours which can scarcely be accounted for by injury of the local tissue. We assume that the injury of the local tissue gives rise to toxic proteoses which are absorbed into the blood and injure the entire organism, causing among other things a considerable destruction of tissue protein in all parts of the body and the resultant increase in blood noncoagulable nitrogen followed by a great rise in urinary nitrogen.

These toxic proteoses isolated from the intestine, from the peritoneum and from the pancreas have certain biologic reactions in common, but give no specific reactions by which we can differentiate them. They give no anaphylactic reactions in guinea-pigs, no precipitins, no complement fixation. It has been shown[4] that the blood of dogs injected repeatedly with proteose cannot destroy the toxic proteose, whereas the tissues of such animals can rapidly destroy such proteoses, in vitro.

The proteose concerned in the intoxication of intestinal obstruction is resistant to digestion by intestinal mucosa, and pancreatitic and tissue ferments. We have not yet determined whether the toxic proteoses concerned in hemorrhagic pancreatitis and general peritonitis possess the same resistance to digestive enzymes.

Any animal injected with one proteose becomes resistant not only to this proteose but also to other proteoses. For example, proteose from human material when injected into a dog will give tolerance to any of the proteoses obtained from the intestine or peritoneum of the dog or cat. This holds for all proteoses tested by us.

2. Petersen, Jobling and Eggstein: Jour. Exper. Med., 1916, xxiii, 491.

3. Cooke, Rodenbaugh and Whipple: Jour. Exper., Med., 1916, xxiii, No. 6.

4. Whipple, Stone and Bernheim: Jour. Exper. Med., 1914, xix, 144.

It is important to note that dogs with long continued obstruction or closed intestinal loops will survive lethal doses of pure proteose with but few clinical symptoms of intoxication. Dogs recovering from a sterile pleurisy or peritonitis also show a definite resistance or tolerance to subsequent proteose injections. All this evidence strengthens the argument that a proteose intoxication is present in these various conditions.

Other conditions in which inflammation and pus formation or tissue destruction are conspicuous may be considered in which it is possible that toxic proteoses may be concerned. We have made experiments with sterile pleurisy, considered as identical with pertitonitis, and with sterile abscess formation, but do not care to report our findings at this time. Infarcts, pneumonia and many other conditions are interesting possibilities which are being studied.

I feel confident that sufficient evidence has accumulated to show that there is a definite proteose intoxication in intestinal obstruction and allied conditions, in general peritonitis, either septic or sterile, and in acute hemorrhagic pancreatitis. I believe that the proteose intoxication is the most important factor in the general intoxication noted in these conditions. The detailed experiments will be published in the near future.

THE USES OF THE DESICCATION METHOD IN OPHTHALMOLOGY

WITH SPECIAL REFERENCE TO EPITHELIOMAS OF LIDS, CANTHI AND CONJUNCTIVA: REPORT OF CASES *

WILLIAM L. CLARK, M.D.
PHILADELPHIA

The success obtained in some ophthalmologic lesions by the desiccation method is my reason for relating as clearly and briefly as possible what has been achieved up to the present time.

Fig. 1.—Round cell sarcoma of lower lid; condition before excision.

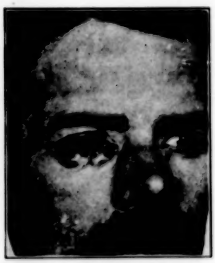

Fig. 2.—Recurrence two weeks after excision; treated by desiccation at this stage.

Details concerning this method have already been published.[1] In the present paper only those points will be emphasized that seem essential for a proper understanding of the application to ophthalmology.

The desiccation method is one by means of which certain congenital or new growths may be reduced by employing heat of just sufficient intensity to desiccate, but not to carbonize them. This heat is best generated by means of a high frequency electric current, which is subject to accurate regulation. I have been unable to produce a current possessing the proper qualities for eye work from any apparatus except a high speed static machine equipped with suitable accessories for transforming the static into a high frequency current.

Fig. 3. — Condition one month after one desiccation treatment.

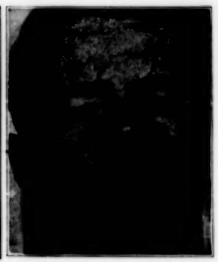

Fig. 4.—Same as Figure 3 with eye closed. Slight recurrence at inner canthus nine months after responded to another treatment.

The current thus produced has been found to be smoother and subject to more refined regulation than that generated from an induction coil or transformer. This difference in quality of the static and the coil current differentiates desiccation from destructive fulguration.

The technic for eye applications is as follows: The patient reclines on an operating table which is grounded, if made of metal; otherwise grounding is not necessary. The area desired to be treated is anesthetized locally by the means that seems best for the case under treatment. For the conjunctiva, a 4 per cent. solution of cocain, and for the lids the infiltration of a 1 per cent. solution of novocain and epinephrin are satisfactory. The current is tested so that the desired thermic intensity may be produced. An extremely fine steel needle set in a suitable insulated holder is the best applicator for ophthalmologic growths. It is an advantage to have an assistant make and break the current at given signals, so that the operator may give his whole attention to the work in hand. The needle is not usually thrust into the tissue, but just allowed to brush it. The depth of desiccation depends on the time of contact and the driving power of the current. These can be regulated. An eye speculum or chalazion clamp may be used to expose the lesion better, as may a fixation forceps to keep the eyeball or lids steady. No arbitrary rules can be given for this application, for different cases demand variation in treatment, and a successful technic must be developed by practice.

The desiccation method is peculiarly adaptable to ophthalmologic growths, because of the ease of application and great refinement of control. It is possible to desiccate a minute growth or pigmentation even on the cornea without danger of penetrating to an undesirable depth. Likewise part or whole of one or both eyelids may be removed with precision. Furthermore, cartilage, periosteum or bone in proximity to or com-

* Read before the Section on Ophthalmology at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

1. Clark, W. L.: The Desiccation Treatment of Congenital and New Growths of the Skin and Mucous Membranes, THE JOURNAL A. M. A., Sept. 12, 1914, p. 925.

prising the orbit may likewise be devitalized by desiccation, provided these structures are directly accessible.

After a growth has been converted into a dry mass by the treatment, it is usually curetted away or excised immediately after desiccation; but sometimes it is better to allow it to slough. Conjunctival growths become macerated by the lacrimal secretion and slough quickly. There should be no bleeding. A good cosmetic result follows the desiccation treatment, because no sutures are necessary and the cicatrix does not show

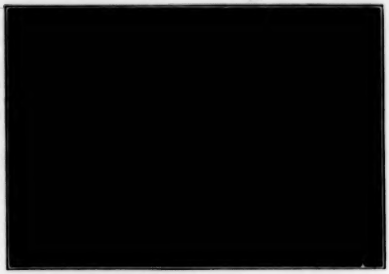

Fig. 5.—Photomicrograph from growth shown in Figure 1.

a tendency to contract as after cautery, electrolysis or, indeed, excision. Infection has never been observed after this treatment, and blood and lymph channels are sealed. A fact worthy of special note is that in case of epitheliomas of the lids, it is not always necessary to desiccate quite all the malignant tissue, as the heat penetration is sufficient to cause a retrogression and final disappearance of the remaining cancer cells, while the normal tissue recovers. On account of this property possessed by the desiccation method, it is often possible to add to the cosmetic result, and to prevent exposure of the eyeball, with its incident dangers.

My experience with the desiccation method in ophthalmologic growths covers a period of seven years, and comprises the lesions mentioned in the accompanying tabulation.

LESIONS TREATED BY AUTHOR

Lesions	*Number*
Epitheliomas of the lids, canthi, conjunctiva and adjacent cutaneous surfaces (localized)	84
Epitheliomas of the lids, canthi and conjunctiva, and involving sinuses or orbit (very advanced)	8
Round cell sarcomas of lids (localized)	2
Melanosarcomas of palpebral and bulbar conjunctiva, and cornea	4
Angiomas of lids	11
Pigmented and other moles, and warts of lids	46
Xanthoma palpebrarum	17
Lupus erythematosus of lids	3
Pterygium	2
Granular conjunctivitis	5
Corneal ulcers	3
Total number of lesions treated	186

Epitheliomas of the lids, canthi, conjunctiva and adjacent cutaneous surfaces, as the brow, nose and cheek, are in a large percentage of cases of the basal cell type, and therefore of low grade malignancy and slow of progression, and they seldom metastasize. This is not the case with epitheliomas of the prickle or cuboid cell types which are frequently found in mucous membranes such as the lips, tongue and buccal surfaces as well as in the skin of the extremities, etc. These usually progress rapidly and metastasize early. In the case of basal cell epitheliomas, local attack if thorough should result in permanent relief in practically all cases, while with the prickle or cuboid cell epitheliomas wide ablation and dissection of all adjacent glands is imperative, and even when this is done the results are, as all know, far from satisfactory. Knowing, then, that the great majority of ophthalmologic epitheliomas are of low grade malignancy, it seems a duty to choose, from the various methods of treatment, one that insures a good cosmetic result as well as at least an equal chance of cure.

It has been found that the desiccation method possesses these combined advantages. It is quite true that even the basal cell type may progress to a fatal termination; but this, I believe, is due to long neglect or improper treatment.

I have hitherto refrained from comparing the respective merits of methods employed by various advocates for the treatment of these lesions, but the time has come when I feel justified in doing so.

ADVANTAGES OF THE DESICCATION METHOD

The desiccation method has the following dvantages over operative surgery in localized basal cell epitheliomas in ophthalmologic regions:

1. Eradication is at least as thorough, and no sutures are necessary. It is a well known fact that sutures often favor recurrences.
2. There is less chance of recurrence because blood and lymph channels are sealed.
3. In case of recurrence, which sometimes happens, the lesion may be treated again without materially lessening the chances of ultimate cure or cosmetic result.
4. There are better cosmetic results, because of the absence of contracted cicatrix.

Advantages over radium and the Roentgen rays are:

1. One treatment is usually all that is necessary.
2. There is a better standardization of dosage.

Fig. 6. — Epithelioma of upper lid, involving cartilage.

Fig. 7.—Result of one desiccation treatment; cartilage conserved; no recurrence in six months; note absence of contracted cicatrix.

3. Action is confined to the area under treatment, and hence there is less danger of impairing the vision or the vitality of adjacent tissues.
4. The effect of desiccation is constant, while that of radium and the Roentgen rays is variable in different cases. It has been observed in every case where the Roentgen rays were used previously without success, that the results have not been as prompt as when desiccation alone had been employed. This seems to be due to impairment of vitality of tissues by the continued use of the Roentgen rays.

Advantages over the cautery, carbon dioxid snow, liquid air, arsenic or zinc chlorid plasters or other escharotics are:

1. There is devitalization of growth with one application and immediate removal of the growth.
2. There is greater precision of application and certainty of thoroughness.
3. There is less danger of stimulating growths by inadequate destruction.
4. There is conservation of normal surrounding tissue.

Fig. 8. — Epithelioma of lower lid, inner and outer canthus, and malar region.

Fig. 9.—Result of three desiccation treatments; no recurrence in fifteen months.

5. There is less inflammatory reaction and discomfort to the patient.
6. There is less danger of symblepharon as a secondary complication.

Advantages over electrolysis or zinc mercury ionization are:

1. Desiccation destroys, from without inward, with an even distribution of destructive action.
2. It is more rapid in action and less painful.
3. There is no danger of dizziness or syncope.
4. Healing is more rapid.

It is not to be understood that the foregoing methods are always to be condemned, for in competent hands excellent results have been obtained by them all; but experience has taught me that desiccation possesses greater advantages, compared point for point, than any of these methods for the treatment of the lesions under discussion.

RESULTS IN LOCALIZED EPITHELIOMAS

Of the eighty-four cases of localized epitheliomas, the average age of the patients was 52 years. The youngest was 28 years. Biopsies were made in twenty-one cases, and these all proved to be of the basal cell type. In the remaining sixty-three cases, the clinical diagnosis was clear; hence a pathologic examination did not seem necessary or prudent, because a patient is more or less jeopardized from a curative and cosmetic standpoint by incising the growth and would to a certain measure defeat the object of desiccation. A biopsy, therefore, was performed only in such cases as seemed doubtful.

Of the cases treated, one has not recurred in six years, two in five years, two in four years, five in three years, seventeen in two years, and twenty-seven in one year. Fifteen have not recurred in periods ranging from three to eleven months. Those under one year will not be considered in computing percentage. There were six recurrences within one year and four within two years. Of these ten cases that did recur, six patients have remained well one year or more after a second treatment. Two cases recurred a second time within a year, but the patients have remained well for a year or more after a third treatment. Two recurred a third time within one year; one of these patients is apparently well after six months, and the other is under treatment at the present time. Two of the remaining five patients died within a year, and at time of death there was no recurrence. The remaining three I have not up to the present time been able to follow. Deducting the fifteen cases in which less than a year has elapsed since treatment, the two patients who died and the three cases unaccounted for, a percentage will be computed from sixty-four cases. Fifty-four have not recurred in from one to six years, which is 84.375 per cent. of cases in which there has been freedom from recurrence one year or over after one treatment. If the ultimate results of the cases that recurred and received a second or third treatment are taken into consideration, the percentage of apparent cures, using freedom from recurrences one year or over as a basis, will be raised to 96.875 per cent. It is possible that the three cases unaccounted for would raise the percentage even higher. With knowledge learned from mistakes and more thoroughness of technic gained from experience, and also with the success obtained with basal cell epitheliomas in other parts of the body, which is not recorded in this paper, I believe that practically all patients with basal cell epitheliomas can be permanently cured, or if in a small percentage there is a recurrence, they may be treated with at least an equal chance of cure as before the first treatment.

Eight cases of very advanced epitheliomas involving sinuses or orbit were treated by desiccation for palliative effect only. Six of these cases were recurrences after operative surgery, and continued radium or Roentgen-ray treatment. The other two had been treated by Roentgen rays only. At the time these patients applied for treatment, they were absolutely inoperable. Much was done to relieve pain and stay the progress of the disease. No cures were accomplished or expected in these cases.

Fig. 10. — Epithelioma of lower lid and inner canthus, involving cartilage.

Fig. 11. — Condition after one desiccation treatment; no recurrence in eight months; note absence of contracted cicatrix.

Two cases of advanced round cell sarcoma of the lids were treated, one on the upper right lid of a girl baby aged 8 months, that had recurred two weeks after excision. There was a diversity of opinion in this case as to the diagnosis. One pathologist reported it as a round cell sarcoma, while the other was doubtful. At any rate, there has been no recurrence eight months after one desiccation treatment with very slight deformity.

The other case was a round cell sarcoma of the lower right lid of a man aged 45 years. The diagnosis

was confirmed by pathologic examination. This was also a recurrence two weeks after operation. One desiccation treatment cleared it up with practically no evidence of deformity other than absence of cilia. Nine months after treatment a growth the size of a pea reappeared at the inner canthus. This was treated by desiccation three months ago, and it is too early to report the ultimate result.

Four cases of melanosarcoma were treated. Two of these involved the palpebral and bulbar conjunctiva, and consisted of several slightly elevated pigmented growths showing a tendency to merge. In one, operation had been performed with recurrence. In one case there was no recurrence in ten months, but in the other there is a slight reappearance of pigmentation in one small area, and will be treated again. The other two cases were very much alike and consisted of elevated pigmented growths about three-eighths inch in diameter, involving the bulbar conjunctiva and cornea. The diagnosis was confirmed by pathologic examination. These cases were treated in the same week. There has been no recurrence in either case in four months.

Fig. 12. — Epithelioma of lower lid and outer canthus, involving cartilage.

Fig. 13. — Condition after one treatment; no recurrence in seven months.

BENIGN LESIONS

Lesions such as warts, moles with flat or pedunculated bases and xanthoma, even though they are on the margin of the lid and involving the palpebral conjunctiva, are easily removed with one desiccation treatment without noticeable scarring. There have been no failures in a total of sixty-three cases treated.

Erectile cutaneous or subcutaneous angiomas also respond to one application, if the desiccation is carried deeply enough to obliterate the blood lakes, and a good cosmetic result is the rule. There were two unsatisfactory results in eleven cases, the cause of which was failure to desiccate deeply enough.

Three cases of lupus erythematosus of the lids responded to one desiccation treatment.

Five cases of chronic granular conjunctivitis were each very much improved by one desiccation treatment. An ophthalmologist who observed one result said that as much had been accomplished by this treatment as could be accomplished in three months with silver nitrate.

Two cases of pterygium complicating epitheliomas of the inner canthi were successfully treated by desiccation. Another case, in which there were eight recurrences after operation, was treated by this method, but sufficient time has not yet elapsed to tell whether or not there will be a recurrence. Slight symblepharon resulted in this case.

Three cases of indolent corneal ulcer that had resisted ordinary remedial measures responded to one desiccation treatment.

CONCLUSIONS

1. Desiccation is a successful treatment for localized basal cell epitheliomas of the lids and canthi, both from a curative and a cosmetic standpoint.

2. In advanced epitheliomas of these regions when sinuses or orbit are involved, complete success is not certain because of the inaccessibility of the diseased tissue, and is applied for palliative reasons, when operation fails or is contraindicated.

3. The results thus far in round cell and melanosarcoma of the lids and conjunctiva have been good, but a sufficient time has not elapsed in any case to determine ultimate results.

4. Success is assured in benign growths of the lids, such as angiomas, warts, moles, xanthoma and lupus erythematosus.

5. Desiccation may be used to advantage for the treatment of pterygium.

6. The method is valuable in the treatment of granular conjunctivitis and corneal ulcers.

7. Symblepharon usually does not follow desiccation.

8. There is no danger of applying the desiccation treatment to growths on the cornea, as it is under perfect control.

NOTE.—Other photographs of epithelioma cases clear enough for publication, showing freedom from recurrence for over one year, have been published before, and hence are not available at this time. For this reason, only comparatively recent pictures can be shown.

1809 Chestnut Street.

ABSTRACT OF DISCUSSION

DR. S. LEWIS ZIEGLER, Philadelphia: High frequency desiccation for the removal of accessible growths is applicable whether the new growth is malignant or benign. The advantages which this procedure will present to ophthalmic surgeons are (1) the simplicity of the technic; (2) the rapid healing without scar tissue; (3) the low percentage of recurrence. The disadvantages are (1) the elaborate and costly apparatus necessary to obtain the best results, and (2) the danger of too deep destruction of tissue unless the operator is skilful and thoroughly trained in this special field of work. Dr. Clark recently treated for me a case of angioid growth on the forehead, the result of traumatism many years ago, but which had recently begun to show malignant characteristics. The result following a single treatment has been very satisfactory, and scarcely a mark is now visible. The possibility of removing growths from the cornea and sclerocorneal limbus is of great interest to us. This of course requires very careful technic. The rugae and granulomas of chronic trachoma will often yield to this technic and thus save us more extensive operative interference. I hope soon to try its efficacy in a case of keloid following a traumatic pterygium. It is also possible that a method may be devised of introducing the needle into the lacrimal sac and of so regenerating its lining that excision will not be necessary. I have no doubt that many other uses will suggest themselves as we continue to study the possibilities of this procedure. I am especially interested in the fact that the technic

Fig. 14.—Angioma of upper lid.

Fig. 15.—Result of one treatment.

of this procedure shows the advantages of the principle of high voltage and low amperage, a principle that I have long since advocated in the application of the galvanic current to the eye; and also that it tends to conserve tissue and thus yield a good cosmetic result, which requirement was the aim of my galvano-cautery operation for ectropion and entropion.

DR. W. C. POSEY, Philadelphia: I have followed a number of the cases shown and Dr. Clark has treated others for me. In a number of cases, xanthoma cleared away after one application of the method, leaving absolutely no scar. Two other cases of diffuse sarcoma of the conjunctiva were cleared away. In the first case, one in which there had been a recurrence after primary operation on the growth some ten years previously, a second recurrence five years afterward was cleared away, I think, after two sittings. The other case, an isolated sarcoma of the conjunctiva of the lower lid, yielded to one sitting. A case of diffuse injury to the cornea, in which there was a diffuse haze of the epithelium and subepithelial tissues which persisted for several weeks after the use of dionin and yellow oxid, cleared away in forty-eight hours in large measure following one application of this method. The method is of very great value in neoplasms of the lids, obviating doing extensive plastic operations and avoiding the resulting scar.

DR. W. L. CLARK, Philadelphia: One point I probably did not make clear. In treating the cornea I do not use a stream of sparks. When a stream of sparks is used through a spark gap the action is quite superficial. It should never be used in a stream on the cornea. The needle is just allowed to brush the tissue, the merest, faintest contact. If this were not done it would be impossible to concentrate it on a certain point. There is some spreading in fan shape. You must have the needle in direct contact. It is not necessary to have two poles; just one.

BISMUTH PASTE IN CHRONIC SUPPURATIVE SINUSES AND EMPYEMA

INCORRECT TECHNIC AS A CAUSE OF FAILURE IN ITS APPLICATION *

EMIL G. BECK, M.D.

Fellow of the American College of Surgeons; Surgeon to the North Chicago Hospital

CHICAGO

The prevalence of suppurative sinuses has greatly diminished during the past decade. This is due partly to our ability to prevent their formation by treating cold abscesses and joint diseases more scientifically, and partly to the employment of the newer and more effective methods of treatment of sinuses when they already exist.

The present war in Europe, however, will result in a tremendous increase in this class of cases. I am informed that Dr. Alexis Carrel, from one of the field hospitals of France, that nearly every case of gunshot wound is infected before it reaches the hospital. Dr. Carrel further reports that these gunshot and shrapnel wounds are followed by suppurative sinuses, and that there are thousands of such cases in France. No doubt, the other belligerent countries are having the same experience, so that after the war is over there will remain for years an army of invalids with these chronic suppurations.

It is principally for this reason that I am tempted again to present the subject of treating this class of cases.

Ten years have elapsed since the bismuth treatment of suppurative sinuses and abscess cavities was introduced into surgery. During these years this method of treatment has been given a most thorough and impartial trial. When first introduced, surgeons in this country and abroad readily took up the method, because it appealed to them as a rational treatment, and because my report contained such surprisingly successful results. Besides, the material at hand was plentiful, and patients were willing to submit to any form of operative or nonoperative treatment which gave the slightest prospect for a cure.

Shortly afterward there came reports from the various clinics. Some surgeons showed far better results than my own, others less favorable results, and in the hands of a few the procedure was more or less a failure. Undoubtedly these reports represent only a fraction of the cases in which the treatment was employed, for many country practitioners who used the bismuth treatment did not report their results. The accompanying table presents the statistics recorded in the literature.

Fig. 1.—Injection of sinuses from tuberculous hip, showing narrowing of channels of preexisting abscess cavities.

This series of 527 cases (319 nose and throat cases excluded), from so wide a range of sources, gives an average of 80.64 per cent. of cures, the lowest being 12.5 per cent., and the highest, 100 per cent.

How can we explain the lack of uniformity in results? To ascertain this I have made observations in clinics here and abroad, I have conferred and corresponded with surgeons, and finally I have come to the conclusion that faulty technic is the chief cause of failures.

At the North Chicago Hospital, where the method was started in 1906, we have had exceptional opportunities for treating suppurative sinuses and abscesses with this method, the material now amounting to over 1,800 cases, which includes almost every variety of suppurative disease. No doubt, we committed many blunders before our technic was perfected; but I feel that with accumulated experience and from what I have learned through my own mistakes and those of others, I am now in a position to outline for the pro-

* Read before the Section on Surgery, General and Abdominal, at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

fession a technic which will assure good results to those who will follow the rules.

I shall at this time make no reference to the statistics of my own results. The members of the profession are not so much interested in what the author of a method can do, as in what they themselves are able to accomplish.

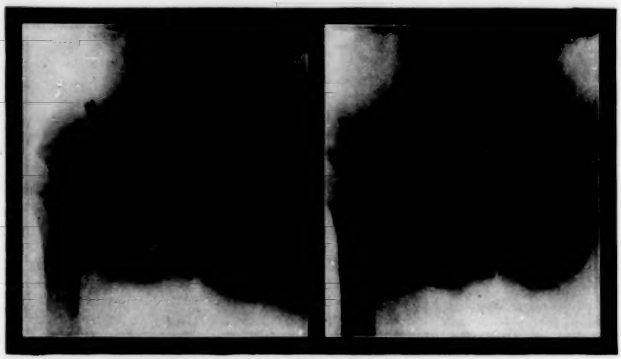

Fig. 2.—Rectal fistula, originating from hip joint disease; coexisting paravesical abscess.

PATHOLOGY OF SINUSES

In order to carry out the treatment rationally and intelligently, one must be familiar with the pathology of suppurative sinuses and of the manner in which they originate.

We must bear in mind that a sinus is nothing more than a contracted abscess cavity. Its formation usually takes place in the following manner:

After an abscess has formed, the increasing pressure of pus within the pus cavity will undermine the tissues in various directions, until the abscess has reached a place near the surface of the body or some hollow organ, such as the intestine or bladder, where it will break through and empty its contents. The usual route is along the muscle sheaths or fascia, the abscess opening at times quite a distance from its origin. In one of my cases a psoas abscess opened above the clavicle, and the resulting sinus was thought for a time to be a broken-down tuberculous gland, until the paste injected into it escaped from a second sinus near the sacrum, This cleared up the diagnosis.

After an abscess has emptied its contents, a shrinkage of the walls takes place so that after a time only a narrow channel, or sinus, remains. Sometimes these channels undermine the tissues to such an extent that a complex network of sinuses results. This fact is illustrated in Figure 1, representing a hip-joint disease in which the abscess perforated the acetabulum and undermined the pelvic fascia.

When small abscesses lock themselves off, they empty their contents in different regions. This explains the multiplicity of openings. I have seen as many as forty openings resulting from a knee-joint tuberculosis.

Sinuses frequently open into the bowel or bladder in addition to other openings on the skin, and thus fecal matter or urine may escape from the skin sinuses. Pecently I published the report of a series of such cases, and desire to cite two of unusual interest, one illustrating a urinary, and the other a fecal fistula, and the technic to be employed in such cases:

STATISTICS FROM THE LITERATURE

Author	No. of Cases	Condition	Percentage of Cures
Ochsner, Chicago	20	Tuberculous sinus	55
Ridlon and Blanchard	17	Tuberculous sinus	53
E. G. Beck, Chicago	192	Collective report	64
Robitschek, Minneapolis	9	Tuberculous sinus	55
Don, Edinburgh	...	Tuberculous sinus	17
Rosenbach, Berlin	4	Tuberculous sinus	50
Dollinger, Budapest	16	Tuberculous sinus	12½
J. C. Beck, Chicago	319	Nose and throat cases	22
Pennington, Chicago	17	Rectal fistulas	76
Baer, Baltimore	12	Tuberculous sinus	33⅓
Stern, Cleveland	4	Tuberculous sinus	100
Steinman, Munich	5	Tuberculous sinus	20
Bogardus, U. S. A.	1	Tuberculous sinus	100
Vidakovich, Russia	2	Empyema	100
Nemanoff, St. Petersburg	6	Empyema	100
A. J. Ochsner, Chicago	14	Empyema	85
E. G. Beck, Chicago	11	Empyema	82
Ely, New York	14	Tuberculous sinus	43
Hines, Cincinnati	9	Tuberculous sinus	89
Cuthbertson, Chicago	1	Intestinal fistula	100
Sandor, Sag., Budapest	2	Otologic	100
Heitz, Boyer, Morens, Paris	11	Renal sinuses	73
Zollings, Zurich	25	Tuberculous sinus	54
Schober, Philadelphia	5	Tuberculous sinus	80
Gessner, New Orleans	4	Tuberculous sinus	50
Schmid, Vienna	15	Tuberculous sinus	30
Rivera, Porto Rico	8	Tuberculous sinus	75
E. Goror, Paris	3	Tuberculous empyema	66
Reichelfelder, Washington	4	Tuberculous empyema	75
Brandes, Kiel	29	All varieties of sinuses	76
R. Beck, Chicago	58	Alveolar sinuses	54
R. Beck, Chicago	9	Empyema antrum	66
Collective reports from 19 dental surgeons in U. S. A.	39	Alveolar sinuses	74
Collective reports from 19 dental surgeons in U. S. A.	4	Empyema antrum	100

CASE 1.—*Rectal and urinary fistulas resulting from hip-joint disease and spinal tuberculosis.*

I. B., woman, aged 35, had developed hip-joint disease and spinal tuberculosis at the age of 9. After a number of years of conservative treatment, abscesses formed around the hips and in the lumbar region. Several of these were incised and others opened spontaneously. At the age of 20 she had ten discharging sinuses. During the past ten years she had

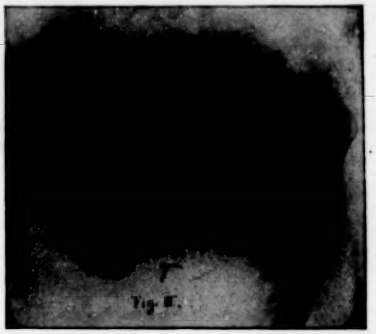

Fig. 3.—Rectal fistula, originating from hip joint disease; ischium absent, destroyed by tuberculosis.

undergone a number of surgical operations, none of which were of avail. At the age of 28 she joined the Christian Scientists, and became a most devoted disciple of that cult, receiving their constant treatment for eight years.

I saw her in 1909; she could not walk but could manage to get out of a very low bed to urinate about every half hour. The cystitis was the result of a perforation of a sinus into the bladder. Another sinus perforated into the rectum and another about 1 inch from the anal opening.

Here we have a coexistence of a hip and spinal tuberculosis which has produced a rectal and vesical fistula, a most distressing combination.

The bismuth treatment had the effect of closing both the fecal and the urinary fistulas, but several of the suppurative sinuses persisted. The patient was soon able to be up and walk for blocks, and resumed her worship at the nearest Christian Science church. In all sincerity she attributed her improvement to her faith in Christian Science. In order not to hurt my feelings, she declared that I myself was a Christian Scientist, but was not aware of the fact.

Fig. 4.—Flexion and extension in healed out hip joint disease after injection; head of femur absent. See roentgenogram (Fig. 3).

CASE 2.—*Hip-joint disease causing pararectal abscess and fecal fistula; twenty years' suppuration; closing of fecal and suppurative fistulas with bismuth injections.*

C. T. H., man, aged 30, had had a right hip-joint disease since childhood. At 10 the necrosed head of the femur was removed; several sinuses leading to the hip-joint remained, which kept on discharging for the past twenty years and required dressing twice daily. His health was naturally very much deteriorated.

I saw him in January, 1913. He felt a swelling in the perineum and pain in the rectum. On account of high temperature, I opened this pararectal abscess and evacuated a large amount of pus. Inserting my finger into the cavity, I felt and removed three small spicules of bone. I noted that this cavity communicated with the bowel higher up and discharged a large amount of malodorous pus mixed with fecal matter. This fecal mixture kept discharging for weeks, so that a semblance of cleanliness could not be maintained.

Bismuth injections were begun, and the closure of the fecal as well as the suppurative rectal channels was accomplished in a remarkably short time. The patient gradually improved in general health, but not all the sinuses closed. Injections were repeated at intervals of a month, and small spicules of bone extruded themselves from time to time.

At present he reports that only one sinus near the hip is open, discharging only a few drops of serous material, and that he is able to work on the farm. Figure 3 illustrates injected sinuses.

Comment.—1. Radical surgical interference in such a case is strictly contraindicated.

2. Small sequestrums are frequently the cause of continued suppuration and must be removed.

Fig. 5.—Rectal fistula, proved by bismuth injection to be a tuberculosis of the eleventh dorsal vertebra.

3. Hip-joint disease may at times cause pararectal abscesses and may be mistaken for a rectal fistula.

4. A fecal fistula will often heal while the pus discharge continues. A diseased process higher up is usually present.

SINUSES MISTAKEN FOR RECTAL FISTULAS

About 20 per cent. of all cases of diagnosed rectal fistulas are not rectal fistulas at all, in the true sense of the word, but are sinuses which resulted from spinal tuberculosis, hip-joint disease or intrapelvic abscesses. This statement may surprise a good many, but I am able to confirm it by a series of over a hundred cases. The gravitating abscesses happen to open so near the rectum as to be mistaken for rectal fistulas.

In a series of 138 cases of hip-joint disease in my own practice, which I recently tabulated, I find six

cases in which a rectal fistula (?) resulted from hip-joint disease, and the communication between the hip-joint and the rectal fistula is illustrated in every one of them. I cite one of the cases in this connection:

Case 3.—*Hip-joint disease complicated with fecal and pararectal sinus and paravesical abscess; closure after bismuth injections.*

C. V., man, aged 26, had been well to the age of 14, when he suddenly developed a severe pain in the right knee. A day later the pain shifted to the hip. The trouble was diagnosed as rheumatism (?).

Abscess in the hip followed and was opened at home; a drainage tube was inserted, and a secondary infection took place. Two years later the patient was operated on in Iowa City. After operation the sinus remained closed for five months, but spontaneously reopened. Thereafter sinuses appeared in different regions of the hip, and finally a pararectal abscess formed, which was opened and drained.

He came to me in January, 1912. The right limb was about 3½ inches shorter than the left. Bismuth paste was injected, and after three injections all sinuses closed. Two weeks later the patient could walk around without crutches, which he had not done for years. He remained well for two years, but in December, 1913, suddenly developed a severe pain in the region of the lumbar vertebra. He kept on getting worse, the pain extending anterior to the bladder. He had frequent urination, vesical tenesmus and great tenderness over the bladder. He returned to Chicago immediately, and I found a bulging over the old pararectal scar. I incised it and evacuated about a pint of reddish pus, which was mixed with fecal matter. It was thus evident that communication must have existed between the rectum and this abscess.

The injection of bismuth revealed a most instructive condition. The paste filled out all the pararectal sinuses which originated from the old hip-joint disease, and communicated with them. There is a side branch which through a narrow channel turns forward, anterior to the bladder, and fills up a cavity about 3 inches long and about an inch wide. This can be observed only in the stereoscopic roentgenogram. A single plate gives rise to a false interpretation (Fig. 2). After two more injections the secretions became serous; fecal matter, as well as pus, stopped discharging, and the patient regained his health with unusual rapidity, and is perfectly well today.

Comment.—The instructive features in this case are: 1. It proves that hip-joint disease can produce a fistula around the bladder and is likely to perforate into the bladder. 2. A fistula which opens near the rectum may originate in the hip-joint. 3. Such cases as this may be regarded as inoperable and still curable by this simple method of injection. 4. There is one remarkable phase of this case: In spite of entire destruction of the hip-joint, the patient has perfect motion and normal strength in his limb. There is a shortening of about 3½ to 4 inches. He can stand on the affected limb as long as on the sound one. There is the same amount of flexion as in the healthy limb, although the entire head of the femur has been destroyed and absorbed (Fig. 4).

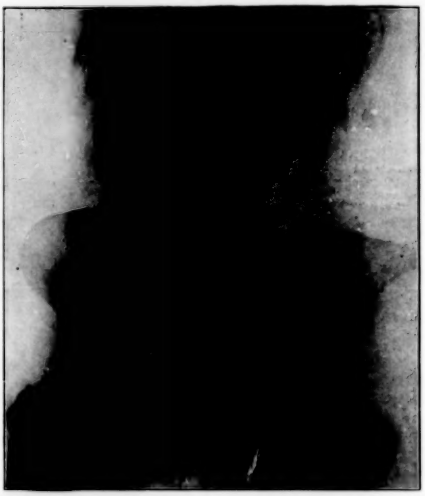

Fig. 6.—Supposed hip joint disease, appearing to be a paranephritic abscess, with subsequent injection, proved to be a tuberculosis of the twelfth dorsal vertebra (see Fig. 7).

That a sinus resulting from a spinal tuberculosis may be mistaken for a rectal fistula is clearly illustrated by the following case:

Case 4.—A man, aged 53, developed what was thought to be a pararectal abscess twelve years before I saw him. It was incised, and a fistula remained. During the next twelve years he had three extensive operations for rectal fistula, the last resulting in incontinence of feces.

I saw him in July, 1913, in London, Canada. He had been on a cot for nearly two years. The discharge was so profuse that he had to be dressed three or four times a day in order to preserve a semblance of cleanliness. The rectum was gaping, so that one could inspect about 4 inches without a speculum.

A week later he came to Chicago. I injected the pararectal sinus with bismuth paste and took a roentgenogram (Fig. 5). This revealed the fact that the supposed rectal fistula originated in the eleventh dorsal vertebra and caused multiple abscesses and sinuses in the abdomen, all communicating with the rectal sinus.

This was evidently a case of tuberculous spondylitis, the psoas abscess opening near the rectum.

The therapeutic result was very satisfactory. The sinuses began to close, the patient gained rapidly in weight, and three months later he left the hospital with only one sinus in the rectum discharging a small quantity of pus.

ADVANTAGES OF THE BISMUTH METHOD

Having now a clear picture in our minds as to the origin and formation of fistulas and sinuses, we appreciate why some of our operations in the past have not produced the desired results. To dissect a fistulous tract of only a few inches' extent, such as we find in the ordinary cases of rectal fistula, may be feasible, but to attempt the dissection of a network of fistulas, such as are shown in these roentgenograms, is obviously impossible. Most surgeons can recollect cases in which they have attempted this and had to give up in despair, after one or two hours of work.

In the employment of the bismuth method, we have two advantages: first, it helps to avoid useless operations, and second, it produces results without operation.

The method in question has been described in my previous publications, but I shall here briefly refer to the modus operandi. It consists of injecting a quantity of bismuth paste[1] (liquefied by heating in a water bath) into the opening of a sinus until one feels reasonably certain that all the ramifications have been filled. The paste thus injected will rapidly thicken and remain in the sinuses long enough to permit the taking of a roentgenogram. The bismuth, having the physi-

1. This paste is composed of: bismuth subnitrate, 30 parts, and yellow petrolatum, 70 parts.

cal properties of producing a shadow on the sensitized plate, will give a clear picture of the existing channels of sinuses. If a set of stereoroentgenograms are viewed, the sinuses appear more distinctly, and their relations to the surrounding structures can be satisfactorily estimated. Such pictures will convince even the most skeptical of the value of this diagnostic method. In former years we relied on the probe and colored fluids as pathfinders of these sinuses, but such means may be used as guides only during an operation, as one can readily understand that a probe could never reach the depth of the sinuses shown in these roentgenograms.

When a sinus is very long and tortuous, the paste should be injected in a liquid state, so that it will flow readily into every part of the tract. If there is more than one opening, the paste is liable to escape from the nearest one and thus miss the remaining channels. To avoid this technical error, the mouths of all the other sinuses should be compressed by an assistant, by placing the finger tips against these openings, so that the liquid will flow in other directions, filling up all channels of the sinuses. It is essential that every crevice should be filled at one injection; otherwise there will be a recurrence of suppuration.

A striking example is given in the following case, showing how easily one could miss the focus of infection by faulty technic:

CASE 5.—*Tuberculous spondylitis first mistaken for hip-joint disease, then for a perinephritic abscess, and finally proved to be tuberculosis of the spine.*

A. C., woman, aged 25, developed two years ago pain in the lumbar region. Two months later there was a great deal of pain in the right hip and knee. Below the greater trochanter a fluctuating abscess appeared, which was opened and drained by her physician. She developed high fever, night sweats, became much emaciated and was unable to move. This condition persisted two years, when she was brought to me for treatment with a diagnosis of hip-joint disease and a discharging sinus.

The diagnosis was based on the fact that the abscess opened near the hip, that there was pain in this region, and a contracture of the limb toward the median line, such as very often follows hip-joint disease.

A roentgenogram, before the injection, demonstrated that the hip-joint was free from disease. An injection of bismuth paste, as shown in Figure 6, proves that the sinus extended from the opening on the outer side of the right thigh, along the adductor muscles, underneath Poupart's ligament, following the psoas muscle sheath toward the region of the kidney. In this region there was an accumulation of a large quantity of paste. A stereoscopic roentgenogram indicated that we had to deal with a perinephritic abscess, which had gravitated and opened at the external side of the right hip.

An operation was decided on to produce counterdrainage for the existing perinephritic abscess, and under local anesthesia the abscess was opened and large quantities of pus and paste escaped. The patient, however, did not improve, and quantities of pus kept discharging. I became suspicious that we had not yet struck the right place, and therefore decided to inject the abscess cavity in the lumbar region and carefully prevent the escape of the paste through the original sinus at the hip. This was done by using a large syringe containing 2 ounces of the paste in very liquid state, and compressing the channel above Poupart's ligament by external pressure during the injection, thus forcing the paste into other directions.

To my surprise, I found that the paste passed through the twelfth dorsal vertebra into another abscess on the left side. This is shown clearly in Figure 7. The abscess on the left side in the region of the kidney was then opened and drainage produced.

Fig. 7.—Proof of origin in twelfth dorsal vertebra by second injection.

Even with this additional drainage the patient kept on declining and for a time we thought she could not live; but the injections were continued at intervals of one week for the period of a year. Special care was taken to reach the focus in the twelfth vertebra.

A gradual improvement took place, and now, three years later, the patient is able to be up and about, with a slight discharge from one sinus.

COMMON TECHNICAL ERRORS

What are the technical errors usually committed by practitioners?

1. The bismuth may not be sufficiently incorporated with the petrolatum and the paste therefore contains small lumps of pure bismuth, which interfere with the injection of the narrow sinuses. A little water accidentally dropped into the mixture will produce a solution similar to that of curdled milk. The paste in such a state is unsuitable for the treatment.

2. The mixture is not heated sufficiently to become liquefied. As a result, part of the tract becomes clogged and many of the ramifications are not reached at all.

3. The instruments are often improvised and not suitable for this form of treatment.

4. Undue force is used in the injection, tearing the tissues and forcing the paste and pus into freshly produced wounds. This may cause serious complications.

5. An incomplete filling of the entire sinus tract is the most common error, which is responsible for more failures than any other cause.

6. The sinuses are injected too frequently by some practitioners.

7. Patients are at times allowed to dress their own wounds, reinfection usually following.

8. Physicians at times do not give the paste sufficient opportunity to do the work. Results are not always immediate. Patience and persistence are essential factors in the success of the bismuth paste treatment.

METHOD OF PROCEDURE

For practical purposes the procedure in the average case is here given. Let us take, for example, a case of tuberculous coxitis of long standing, with multiple suppurative sinuses:

1. Preliminary to the treatment, a set of stereoroentgenograms of the affected region is taken, to make sure that there are no foreign bodies or sequestrums present. If they were present, they might be overlooked after the bismuth

Fig. 8.—Osteomyelitis of radius with twelve suppurating sinuses.

had been injected, because the shadows produced by the bismuth would obliterate the shadow of the foreign body.

2. Bacteriologic examination of the secretion is the next step. Smear preparations, cultures, and, in some instances, inoculation of guinea-pigs, are made.

3. The sinus is now ready for injection. No attempt should be made to irrigate the sinuses with antiseptic solutions, nor should any drying out process be tried. The skin surrounding one of the sinuses is washed with alcohol, and the tip of the glass syringe, which has been filled with the liquefied paste, is placed firmly against it, and the paste slowly but firmly forced into its channel until it is seen to escape from the nearest opening. Then the finger is quickly placed against this opening to prevent the escape of the paste, and the injection is continued until the patient begins to complain of some pressure. If there are many openings, an assistant must occlude all of them with his fingers during the injection, in order to be certain that all the branches of the sinuses have been filled.

4. After the injection another set of stereoscopic roentgenograms is taken, which will give a clear picture of the entire network of sinus tracts and sometimes be the means of tracing the path to the focus from which the disease originated.

Fig. 9.—Sequestrum of radius.

5. A sterile bandage is then applied and the patient put to bed, for a few hours, or a few days, depending on the severity of the case. In subsequent treatments the patients are usually allowed to walk about immediately after the injection.

6. The first dressing is done the following day. If the discharge, which before injection was creamy or profuse, has changed to a serous consistency, it is to be regarded as a favorable sign, and a microscopic examination will usually prove it to have become sterile. If the discharge is sterile, the sinuses need not be reinjected unless they later become reinfected. It is not intended that the paste remain in the sinuses. It will gradually exude, and within a week only traces may be found by flouroscopic examination or by roentgenogram.

7. Should the discharge persist and remain purulent, the injections should be repeated at intervals of from five to six days for a reasonable length of time (from four to six weeks), and if after this period there is no appreciable improvement, one must search for the cause. A sequestrum may be present, or the focus of the suppuration be in such location as to be inaccessible to the paste, as, for instance, in the cancellous structure of long bones.

In such cases, either the foreign body must be removed, or, as the case may be, the infected cancellous structure of bone curetted, and the bismuth injections resumed.

For illustration of case with sequestrum, I cite the following:

Case 6.—*Osteomyelitis of ulna, with twelve sinuses and sequestrums.*

Miss F. B., aged 17, had diphtheria at the age of 8, and has had chronic tonsillitis ever since. Three years ago a swelling developed in the right wrist, but gradually the entire arm was undermined with pus, and abscesses formed which were incised and drained. The elbow joint became ankylosed, and the sinuses persisted in discharging.

The patient came with the request to have the arm amputated above the elbow.

Examination, Aug. 9, 1915, revealed the right forearm and wrist and above the elbow studded with twelve suppurative sinuses, discharging foul and creamy pus (Fig. 8). The elbow was entirely ankylosed, the fingers and wrist stiff and swollen. There was a swelling about 3 inches in diameter

Fig. 10.—Sequestrum removed, showing a strip of radius preserved for regeneration of bone.

on the left side beneath the scapula, fluctuating and red on the surface, and also a discharging sinus on the right ankle.

Steroscopic roentgenograms (Fig. 9) showed distinctly a large sequestrum of the ulna, taking in almost the entire length of the bone.

A conservative operation was decided on, instead of amputation. Under general anesthesia the sequestrum was removed through a long incision, and the larger part of the diseased ulna was removed, except the external border and the articular joints at the wrist and elbow, which were left in order to preserve the contour of the arm and leave enough healthy bone for regeneration (Fig. 10).

The essential point in the after-treatment was to treat the wound open. Not a single stitch was put in, and the wound was packed with gauze. Three days later the gauze was removed and the entire cavity filled up with bismuth paste and bandaged. The incision gradually closed by contracture of the wound edges.

The remaining sinuses on the flexor surface were injected, and all healed within a few weeks, so that the patient has at present a useful arm, without any suppuration (Fig. 11). She has developed strength in the muscles, and can perform all housework, lifting heavy articles, such as chairs (Fig. 12), but she still has an ankylosis in the elbow, which we shall try to remedy by subsequent plastic operation.

The sinus on her right ankle was injected once and healed out, and the cold abscess underneath the scapula was treated with the prophylactic method, which I advocate, the abscess being incised and 5 per cent. bismuth paste being injected, and it healed promptly. (Patient exhibited.)

PREVENTION OF BISMUTH POISONING

Great care should be taken not to retain too large a quantity of the paste in large pus pockets for too long a time, because of the possibility of gradual absorption of the bismuth, which is liable to produce toxic effects and even fatal poisoning.

In 1909 I reported the first case of this form of poisoning.[2] At that time I warned the profession against the indiscriminate use of the paste, and this, no doubt, put many on guard who thought that bismuth was an entirely harmless substance. The occurrence of this accident has deterred many surgeons from employing the bismuth treatment, and since poisoning can be avoided, it would be deplorable that an otherwise useful method should not be employed on this account. Although the bismuth treatment is now used more extensively than ever before, there has not appeared in the literature any case of bismuth poisoning for the past few years. That this complication may be avoided is evident from the fact that in our series of over 1,800 cases treated at the North Chicago Hospital, we have not had a single fatal case.

It is, of course, possible that there are persons who have an idiosyncrasy against bismuth and a special susceptibility to its absorption, and may develop toxic effects from bismuth in small doses; but such cases must be very exceptional, when we stop to consider that in 1,800 of my own cases, not a single patient had this idiosyncrasy. Are we to discard an otherwise useful method because of the possibility of encountering such a case? Certainly not; we do not discard ether or anesthesia because there are fatalities on record from its employment.

Should toxic symptoms appear, the paste must be removed by washing out the cavities with warm olive oil. The sterile oil should be injected and retained from twelve to twenty-four hours, in order to produce an emulsion with the bismuth mixture. This emulsion should be withdrawn by means of a catheter or suction syringe. After its removal, all symptoms will promptly disappear. Scraping out the paste with a scoop is a dangerous procedure, because it opens new channels for absorption.

Fig. 11.—Final result after bismuth injections.

SUMMARY

1. Failures in the application of bismuth paste are principally due to faulty technic or carelessness.
2. The treatment has passed its experimental stage, and the results obtained by surgeons all over the world warrant its more general employment.
3. Stereoroentgenograms should be employed to control the treatment and to prevent useless operations.
4. Bismuth poisoning can be avoided, and is now a rare occurrence.

2632 Lake View Avenue.

2. Beck, E. G.: Toxic Effects from Bismuth Subnitrate, THE JOURNAL A. M. A., Jan. 2, 1909, p. 14.

ABSTRACT OF DISCUSSION

DR. ALBERT J. OCHSNER, Chicago: In discussing cases that are suitable for treatment with bismuth paste injections we must first consider the mechanical conditions present. Canals extend in a number of irregular directions, with usually enlargements at various points, and little lakes here and there. The progress of the disease is by pressure, pressure necrosis or gravity pressure. Surgery alone cannot discover all these canals and lakes, but the bismuth injection does; hence Dr. Beck's treatment is of such great value. In the first place, he produced a condition favorable for disposing of granulation tissue; second, he disposed of accumulations which increase in amount and continue the pressure necrosis unless removed. Third, bismuth possesses a certain antiseptic quality, as does also the petrolatum, because it has been shown that microbes cannot live when they are mixed up with fatty substances. Now regarding the application of the treatment: Whenever a surgeon has told me that he has not been successful in the use of Beck's paste, I have invariably found that he has not applied the paste in the manner that Dr. Beck has told us it should be applied. I have seen it applied so that instead of merely filling these spaces it would tear the tissues and force the septic material into new spaces. No wonder the patients had an elevation of temperature afterward and their condition became worse! From their point of view the treatment did no good. It is essential, therefore, to inject the paste very slowly and continuously so that it will fill not only the nearest spaces but all spaces, taking the place of the septic material, substituting antiseptic material from which there is no absorption for septic material. Scarcely a day passes that we do not use the paste in our hospital and the results are just as Dr. Beck has described them.

Fig. 12.—Illustration of strength and function of the healed forearm.

DR. EMIL G. BECK, Chicago: The formula we use now is: 30 per cent. subnitrate of bismuth; 70 per cent. petrolatum. In empyema cases I have lately used a 10 per cent. mixture, with very gratifying results. There is no advantage in substituting the subcarbonate for the subnitrate of bismuth in order to avoid bismuth intoxication. Either preparation is liable to produce this complication if used carelessly. Such complications should occur extremely rarely. In my own series of 1,800 cases not a single fatal case has occurred.

Changes in the Diet.—Most of us can recall the days when meat or eggs, or both, formed an indispensable part of the early meal, in the United Sates. At present there are signs everywhere, at least among those classes which are not engaged in more vigorous muscular work, of a simplification of this meal by the exclusion of meat and the substitution of cereals and fruits. This is an approach to the traditional breakfast of continental Europe. It is not easy to analyze the underlying causes for such dietary changes; they are not solely physiological nor economic in origin.—Mendel, Changes in the Food Supply and Their Relation to Nutrition.

SUBLUXATION OF THE HEAD OF THE RADIUS

REPORT OF A CASE AND ANATOMIC EXPERIMENTS *

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ST. LOUIS

While much has been written on subluxation of the head of the radius, the fact remains that no satisfactory explanation of what produces and maintains the deformity has been given. It is hoped that the following history and the succeeding experiments will throw light on the subject.

A boy, aged 5, fairly well developed, was pulled across the floor by his left hand while playing with his brother. The following morning, Jan. 1, 1914, he was brought to me. The hand was in nearly complete pronation, and the forearm slightly flexed and held in front of him. He complained of pain in the elbow; there was no swelling, no redness, no heat. Attempts at supination were painful and were resisted; pronation caused no pain. There was tenderness over the head of the radius. Flexion of the forearm was painful. Several attempts at supinating the hand suddenly resulted in a slight click, felt by the thumb palpating the radial head, and motion in all directions was at once free and painless. The arm was carried in a sling for one day.

The following summer, in a fit of anger, the boy hooked the fingers of his two hands together and, while pulling in this position, subluxation of the right elbow occurred. Immediate careful examination showed the same characteristic pronation and slight flexion of the forearm as in the first instance. No attempt at reduction was made, but the patient was sent away with instructions to return later when a roentgenologist could be seen. He did not come back, for while playing the arm suddenly "became all right."

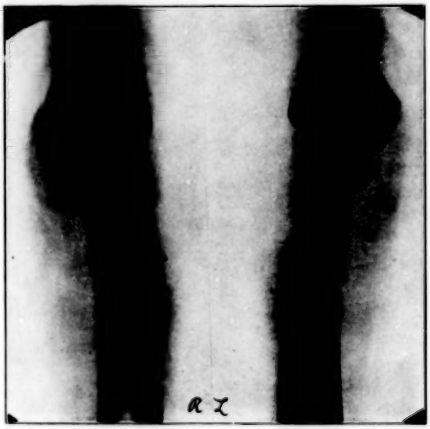

Fig. 1.—Lateral view of right and left elbows.

The accident happened a third time in May, 1915. The patient sat on a chair with his hands clasped in front of one knee, his forearms slightly flexed, rocking back and forth on the buttocks. Suddenly he had pain in his left elbow and could no longer use the arm. The hand was in pronation with the forearm slightly flexed, as in the two preceding instances. A roentgenogram was taken. While an examination was being made, the arm was suddenly free of pain and motion was normal. In the second and third instances no dressing of any kind was used. The roentgenograms show the head of the left radius to be about half the thickness of the epiphysis farther from the capitellum than the right.

In going over the clinical records of Washington University Dispensary and the St. Louis Children's Hospital for the past five years, I have been unable to find any record of a subluxation of the radial head among over 14,000 surgical and orthopedic cases. I am inclined to believe it occurs more frequently than would appear from this, for I have seen one other case myself.

Most of the work on the subject was done previously to 1889, principally by the French and German writers, 400 cases having been reported. Van Arsdale in that year reported 100 cases and gave a complete bibliography. A great many experiments were done on children's bodies by a number of men who proved that the lesion is a slipping of the radial head out of the annular ligament. They thought that the injury was due to a sudden pull on the extended forearm, the hand going into pronation as the injury took place. Some authorities think forced pronation is a factor, but such men as Stimson do not believe this to be the case. All observers heretofore have asserted that the lesion could not take place while the biceps was contracted, and no one has produced it on an adult body.

The hand is held in nearly full pronation, but "exactly how it is held so as to allow some rotary motion no one professes to say" (Cotton). Gardner,[5] in 1837, and Rendu,[17] in 1841, thought that the tuberosity of the radius was caught behind the ulna. Van Arsdale said it was due to the eccentric shape of the radial head, the epiphysis of which became pushed to one side and impinged on the ulna.

In an attempt to clear up the matter, if possible, a number of experiments were made on twelve arms from material in the anatomic laboratory of the Washington University Medical School. In every instance the bones were practically free of muscles, but the ligaments were intact. While trying forcible traction on the first arm the annular ligament could be seen to spring inward; but on attempting powerful adduction, the external lateral ligament ruptured. Of the remaining eleven elbows a subluxation of the radial head was produced in six. In each of these six the annular ligament always slipped over the head when the hand was pronated. One case with the hand in this position resulted in failure. In the remaining four, the ligament tore during traction while the hand was supinated.

All the standard textbooks on anatomy give the shape of the radial head as round. Measurements of 100 specimens show the one diameter to be 1.5 mm. greater, on an average, than the other. In some bones the difference is as much as 3 mm. The long diameter is always in the same sagittal plane as the interior portion of the tuberosity of the radius. The explanation for the lesion occurring with the hand pronated is

* Read before the Washington University Medical Society, April 24, 1916.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelope.

5. Gardner: London Med. Gaz., 1837, xx, 878.
17. Rendu: Gaz. méd. de Paris, 1841, p. 301.

as follows: Anteriorly, from the neck of the radius to the head, the rise is an abrupt one. Any traction with the hand supine pulls the ligament against this. Laterally and posteriorly the ascent is quite gradual, so that in pronation the ligament lies over this part and is stretched until it suddenly slips over the head.

The first successful demonstration gave a typical picture: forearm slightly flexed and pronated, some further pronation possible, supination resisted. The specimen was left until the following afternoon. The lateral ligament and the inner part of the annular ligament were stretched very tightly. Grasped between them was the lesser diameter of the radial head, the greater diameter being anteroposterior. My thought was that the lateral ligament and the outer part of the annular ligament were what held the bone fixed; therefore the inner part of the annular ligament was cut first. The head was very slightly loosened. Then on cutting the lateral ligament the head was immediately freed. Internally on the edge of the radial head was an indentation caused by the taut ligament. It was in line with the anterior portion of the tuberosity, which, with the hand in pronation, lies behind the medial line. One hundred and twenty degrees around posteriorly from this point, on what would ordinarily be the medial surface of the head, but which in this position was slightly external and in line with the posterior part of the tuberosity, were two other indentations caused by the lateral and annular ligaments. They were 1 mm. deep and 3 mm. apart, extending completely across the circumferential articulation, slanting from above, downward and backward, at an angle of 45 degrees with the long axis of the bone.

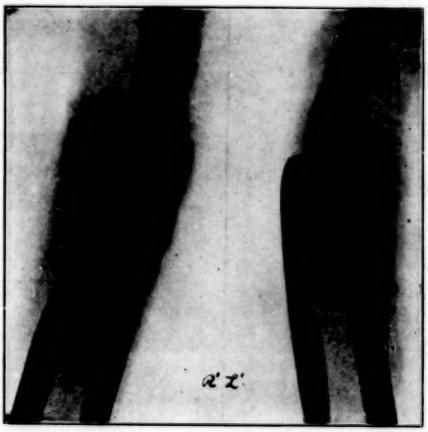

Fig. 2.—Anteroposterior view of right and left elbows. It will be seen that the distance from the head of the radius to the capitellum is greater in L and L' than in R and R'.

To make certain that the inner part of the annular ligament was not holding the head, the lateral ligament was cut first in one case. In the other four cases, the inner part of the annular ligament was cut first. On case, left for fifteen minutes after the radial head had been pulled out of the annular ligament, had a single indentation laterally at the point where the specimen which had been left twenty-four hours had two. The one indentation was, of course, more shallow than the two.

The tuberosity of the radius had nothing to do with the deformity, for a knife blade was easily inserted between the two bones at that point.

To make sure that the wrist or interosseous membrane had nothing to do with the deformity, in the last five successful subluxations, the lower end of the radius and the shaft were freed from the ulna. Moreover, to be certain that I had produced the lesion described by other writers, and being convinced of the cause of the pronated position, one radial head was subluxed, and then replaced by supination three or four times before the ligaments were finally cut to complete the experiment.

In order to lessen the chance of error, measurements were made with calipers.

I have found no mention in the literature of a case in which the injury was produced in other than the classical manner, except one in supination which was reported by Duges.[18] In the case which is the basis of this paper one radius was subluxed while the forearm was flexed about 30 degrees, and the other while the forearm was flexed 120 degrees or more. Furthermore, with the forearms in such a position and the child himself pulling, the biceps must have been contracted. It would hardly seem possible that adduction could have been a factor.

CONCLUSIONS

Subluxation of the head of the radius can occur while the biceps is contracted, with the forearm flexed and without adduction. It occurs only while the hand is pronated. The line of traction is parallel to the shaft of the bone. Supination is resisted because the tense lateral ligament forces the flattened side of the radial head against the anterior edge of the lesser sigmoid articulation and the inner attachment of the annular ligament. Attempts at this motion throw the exposed two thirds of the long axis of the head against an already tight ligament, making it more tense. Complete pronation is possible because the short part of the long axis is behind and moves outward against the loose posterior portion of the lateral ligament.[19]

18. Duges: Jour. hebd. de méd., Paris, 1831, iv, 196.

19. In addition to the references already given, the following will be found of interest:
Clumpsky: Ztschr. f. orthop. Chir., 1911, p. 213.
Bessel-Hagen: Arch. f. klin. Chir., 1891, xli, 420.
Sawicki: Gaz. lek. Warszawa, 1891, Series 2, xi, 702.
Caldwell: Lancet Clinic, 1891, N. S., xxviii, 496.
Broca: Gaz. d. hôp., 1903, No. 56.
Lobit: Med. inf. Par., 1898, ii, 95.

Ante-Natal Hygiene.—So far as the race is concerned the health of the mother, especially at the time she is carrying a baby, is of great importance, and for this reason ante-natal hygiene must be carefully considered. Ante-natal life occupies a period of nine months, except in the case of prematurely born infants. During this time the infant is growing rapidly. The mother supplies the necessaries of life during these nine months, and the infant is being prepared for an existence of many years. On looking at the infant mortality rate for the last few years, we find that it varies a good deal each year according to the age of the infant, and that it is higher during the first month of life than at any other time. It is also seen that infant mortality has decreased more rapidly of recent years during the ages over 1 month than during the first month of life. The greatest improvement has been in the second half of infancy, though there has been a remarkable saving even in the first half.—Ashby.

SEVEN UNERUPTED TEETH IN THE SUPERIOR MAXILLA

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That foci of infection in systemic and general septic conditions are found in the mouth, in abscessed teeth and infected gum tissue, has been widely accepted by the profession. Actual pus-forming conditions of these organs, however, does not exclude them as a cause of systemic disorders. Pressure from teeth, dislodged from their normal tract, and the deposition of supernumerary teeth, are, in many baffling conditions, the unseen causes of chronic neuralgia, rhinitis, neuritis, nasal conditions and hysteria. I do not presume to offer this as a frequent or common cause in these conditions, but only to present it for consideration when other correct diagnosis cannot be reached.

Supernumerary teeth are much more common than we have hitherto believed, because we had no means of knowing their existence without the use of the roentgenograph. The daily use of the Roentgen ray in my practice has proved the truth of this statement by revealing many impacted and unerupted teeth which were direct causes of nerve pressure. We must realize that there are few normal mouths, that is, mouths in which all the teeth have erupted in proper occlusion, and that the tooth germ cells will deposit in any part of the body to which they may become deflected. A striking feature of the cases recorded in which teeth have been found in the nasal cavity is that only one or two teeth have been found, and in several cases the discovery of the tooth has been made when the patient has shown a tuberculous or syphilitic history.

Hopple[1] has reported a case of atrophic rhinitis in which the patient was treated for certain periods, and eventually a tooth was forced through the floor of the nose. Joachim[2] reports a case in which the patient was treated for specific ulceration of the nasal septum, and a tooth was found in the floor of the nose.

The delay in the healing of the fistula leading from these teeth, in specific cases is recorded by Ingersoll.[3] Removal of the cause is not always followed by immediate closing of the sinus.

1. Hopple: Brooklyn Med. Jour., 1900, xiv, 403.
2. Joachim: Orleans Parish Med. Soc., 1895, iii, 52.
3. Ingersoll: Laryngoscope, 1903, xiii, 688.

Fig. 1.—Appearance of nest of teeth and large tooth. (Roentgenogram by Ream.)

Fig. 2.—Appearance after removal of all teeth. (Roentgenogram by the author.)

REPORT OF CASE

This case, with the operation, is reported because it appears to be at least unique in that several teeth were found and removed:

Mrs. X, aged 34, consulted me concerning a bridge extending from the left lateral incisor tooth supplying the left central to the right central. She asked whether the teeth crowned could be in any way associated with the fistula draining into the right nostril. Examination was made of the bridge, and also the fistula observed; the septum was deflected entirely, closing the opening on the right side. A roentgenogram was immediately made through the anterior teeth, which showed an abscess on the left lateral incisor, and also a foreign formation near its apex. A larger film was used and a second exposure made with the tube pointing through and above the nose (Fig. 1). In this roentgenogram a large tooth will be seen which, according to the patient's history, was judged to be the unerupted central incisor, which had never appeared.

The following history was secured from the patient: The sore or sinus in the nose had been extremely annoying, breaking and running with bloody fluid, four or five times a day. She could not breathe through either nostril, and had not done so for about eight years. Each time, following the discharge of the fistula, she became very nervous, suffering from intense pain or pressure in the upper portion of her face, until she had become an extremely hysterical patient. This pressure was also noticed in her efforts at placing her tones high in her head while singing, and when forcing tones she imagined something moved in her head, so that she was compelled to give up her vocal efforts. Six years ago, the patient collapsed and remained unconscious for two days. She states that her case was diagnosed as nervous prostration, and that she never fully recovered from this attack. Two years ago, while dancing, she had felt an extreme pressure in the upper part of her face and again collapsed, this time remaining in a comatose condition for six days. She states the diagnosis was a "blood clot on the brain." She has been in a serious nervous condition since with periodic headaches, following a feeling of pressure and the breaking of the fistula in the right nostril.

Dr. W. H. Haskin was consulted, and the diagnosis verified with the opinion that the tooth highest in the nose was deflecting the septum to the side, and causing the points of inflammation in the right nostril.

No tuberculin or Wassermann test was made.

The operation was performed in my office with Dr. W. V. Ryan assisting. Novocain and epinephrin was the anesthetic used, with infra-orbital, tuberosity and palatine injections.

The left lateral root was removed, and the incision over the apex carried to the base of the nose, with removal of bony tissue, by the use of the chisel and proper dental engine drills and burrs, exposing the nest of six supernumerary teeth. Considerable force and care was required in their removal, as they were packed against each other tightly and embedded in the bony tissue.

The patient's breathing was difficult, and after the removal of these teeth, a very pronounced dilatation of the nostril was noticed, and she exclaimed about "a wonderful breath of air." The only pain experienced during this operation was in her right ear, which was intense when pressure was placed on these teeth. The nervous condition of the patient prevented further operating, and the wound was packed for ten days.

A more profound anesthesia was secured for the next operation, and an injection made into the nasal cavity. With much difficulty and cutting of adhesive and bony tissue, the large unerupted central incisor tooth was exposed and found to be

firmly embedded. By the use of the engine drill and chisel, it was cut off at the incisal edge and carefully worked down until it could be turned into the wound, in order to avoid splitting the surrounding bony tissue. The illustration of the tooth (Fig. 3), therefore, does not show its full length; but it was a perfectly formed central incisor.

A minimum amount of tissue was destroyed, and after the wound was healed, no depression was apparent from the outside and only a small evidence over the teeth in the mouth.

One month after the operation, the headaches and neuralgia had ceased, the hysterical condition was much improved, and the breathing was normal through the nose. The sinus in the nose, as in some cases quoted, was slow to heal; however, the bleeding appeared only occasionally.

A removable bridge was placed in the mouth to restore the lost central and lateral, and the patient was dismissed.

The pressure of these supernumerary teeth as well as the central incisor, forcing the septum, will be realized when the curve of the larger of the extra teeth is noted in Figure 3. The three small teeth are wrapped around each other.

Fig. 3.—Teeth removed. Small group shows three teeth curved around each other. (Photograph by the author.)

CONCLUSION

I believe that this case is an appeal for all who are treating the mouth, nose and surrounding parts to forestall any chance of error by the use of the roentgenograph. The surgeon may relieve many cases of difficult diagnosis, and every dentist who treats the roots of teeth should not work without the daily use of the roentgenograph.

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ORTHOPEDIC TREATMENT IN HEMIPLEGICS OF LONG STANDING*

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It is generally accepted that if a hemiplegic has not improved within a short time, he will never improve; on the contrary, contractures will develop. These patients usually become chronic invalids. It will be of interest, therefore, to see what orthopedic treatment in old and neglected cases can do. This is a plea that the orthopedic treatments should be started early. Patient work will bring excellent results.

The prognosis which the attending physician usually gives to the patient is influenced by the teachings of the neurologists which is as follows:[1]

Patient recovers the power of walking in a short time, viz., six to eight weeks, but muscle retraction and shortening (contractures) almost invariably occur. . . . The depth and duration of the apoplectic seizure will give some hint to the progress in the future. The more incomplete the apoplexy, the better are the chances for recovery. The course during the first few weeks will decide this point. If, during the first month, the hemiplegia continues unchanged in intensity or if only a trace of movement sets in in the affected limb, it will improve very little. On the other hand, a certain degree of movement setting in during the first few days, and steadily advancing during the first period, is a very favorable sign. . . . As soon, however, as the first evidence of contracture sets in there is hardly any prospect of complete restoration.

Dana,[2] Church and Peterson[3] and Starr,[4] in their textbooks, state that after two years, no further gain is to be expected. Curschmann[5] is of similar opinion and says:

Gradual improvement after severe attacks may continue for months; but whatever has not disappeared in from six to nine months, must be regarded as a permanent defect. The more quickly after an attack the improvement in motility appears, the more favorable is the progress.

We can easily understand why the general practitioner, influenced by these teachings, usually watches the case for from three to four months, and is satisfied with the improvements attained by that time. If the patient is then able to walk, he considers himself quite fortunate. If the contractures develop, he is put in the class of "chronic invalid" and is either allowed to remain in the house or sent to a "home for incurables." Many physicians are a little less cautious and do nothing to the paralyzed muscles for the first three months, waiting to see what improvement the patient will get from the medications, and only then is he sent to the neurologist and very seldom to the orthopedist. Of course, it is needless to repeat that, in many cases, the contractures are already present at that time.

The case which we have to report proves many of these statements and emphasizes new ones. We hope, therefore, that it will interest the readers to follow the details.

CASE REPORT

History.—M. W., man, aged 52, admitted to the Montefiore Hospital at the age of 27, had a clear case of right sided hemiplegia with motor aphasia. He became paralyzed at the age of 26. As far as we can find in the history, the cause of the apoplexy was some trauma, sustained three weeks previous to the onset of unconsciousness. He was unconscious for twelve days, which indicates that the attack was quite severe. When he regained consciousness, he suffered severely from dizziness, vertigo and headaches, and was admitted to Mount Sinai Hospital. A decompression was done which relieved the symptoms but not the hemiplegia. He was admitted to the Montefiore Home and Hospital one year after the attack, unable to walk and presenting some contractures. (Probably nothing was done during that interval to prevent contractures.) He was put in the ward for chronic invalids and was confined to the chair and bed for twenty-one years, during which time he did not leave the home even once. Following the prevailing opinion, he was considered hopeless during all this time, and therefore received no treatments. He did not improve spontaneously, but, on the contrary, his paralyzed extremities became contracted. He did not regain his speech, but learned to write with the left hand so that he could make himself understood.

* Read in part before the Orthopedic Section, Academy of Medicine, Nov. 19, 1915.

1. Oppenheim, Hermann: Text Book of Nervous Diseases, Edinburgh, Otto Schultze & Co., 1911, ii, 792.

2. Dana, C. L.: Text Book of Nervous Diseases, Ed. 7, New York, William Wood & Co., 1908, p. 467.

3. Church, Archibald, and Peterson, Frederick: Nervous and Mental Diseases, Ed. 8, Philadelphia, W. B. Saunders Company, 1914, p. 223.

4. Starr, M. Allen: Organic and Functional Nervous Diseases, Philadelphia, Lea & Febiger, 1913, p. 495.

5. Curschmann, Hans: Text Book on Nervous Diseases, Burr's English Edition, Philadelphia, P. Blakiston's Son & Co., 1915, ii, 667-681.

In 1911 we were doing some work on hemiplegic and neurologic paticats and had much success. This patient, who is intelligent, observing this, implored us in a touching note to endeavor to make him walk. Even when we explained to him that he would have to undergo a great deal of suffering, he still persisted in his request. We decided to help him reach his goal.

Examination.—The physical examination made in 1911 showed marked adduction of the right upper extremity. The forearm was flexed to an acute angle; it could not be extended by force more than to an angle of 90 degrees. The wrist was flexed on the forearm; the fingers were markedly contracted and held in a position of a closed fist with the thumb inside the palm.

Lower Extremity: The right thigh was flexed on the abdomen at an angle of 45 degrees, and rotated inward. The leg was flexed on the thigh at an angle of 100 degrees; by using considerable force, the leg could be extended to an angle of 112 degrees. The foot was in a position of talipes equinovarus (that is, where the foot is turned inward and the toes downward). The toes were flexed and bent on themselves. The foot was very firmly fixed.

Here there was practically a bedridden invalid of twenty-one years' standing. His thigh was flexed on the abdomen and the leg so flexed on the thigh that the heel and part of his acquired clubfoot pressed into his buttocks—and this of twenty-one years' standing.

Before undertaking operative procedures, we urged him to stand on his good foot for from ten to fifteen minutes about ten times a day so as to train himself to use that limb, as he had not borne any weight on it for twenty-one years. We also ordered massage for the paralyzed side so as to develop somewhat his atrophied muscles.

Operations and Results.—In December, 1911, we performed a tenotomy of the biceps, semitendinosus, semimembranosus and popliteal fascia and, using considerable force, we brought the leg to an angle of 135 degrees. We might have been able to extend it more, but we feared rupture of the popliteal artery, which had been in a contracted position for so many years. At the same time we corrected the foot slightly. We put the limb in a plaster of Paris cast. The cast was left on only a few weeks, and then we started daily baking (Bier's active hyperemia), massage and stretching slowly the leg and foot. After each massage, the limb was put back into the cast. The process was rather painful, but the patient stood it well. We changed the splint from time to time, making it straighter as we gained motion in the knee. It took almost a year before the knee was perfectly straight.

In December, 1912, that is, one year later, we did a tenotomy of the Achilles tendon, and by brisement forcé corrected the foot. Daily baking, massage and exercises were then carried out regularly. In March, 1913 (three months after the second operation), his knee and foot were straight, a brace was fixed up for him, and the patient for the first time left the ward. Within a few weeks, he walked so well that he asked to go downtown himself (a distance of one and a half hours' ride by elevated trains, car and the short walks from and to the cars) and brought us a report as to what changes Manhattan had undergone in the twenty-two years that he had been in the hospital, or as he called it "imprisoned there." You can easily imagine his joy.

He continued his active exercises so that within a few months he could flex voluntarily his knee and could bear weight on the limb without the brace.

A few months later, we began to treat his upper extremity. By brisement forcé we brought down the elbow to an angle of 100 degrees and straightened the fingers and wrist and put them in a plaster cast. After ten days, baking, massage and exercises were instituted. He has improved nicely. The elbow can be flexed voluntarily and can be extended to an angle of 135 degrees. The fingers and wrist are straight, but there is very little voluntary motion in them. It is doubtful whether he will regain power in his fingers, but with the power he has in his shoulder and elbow, we may be able to fix up some brace and permit him to use the fingers. We are still continuing the exercises, as we feel that in a case of such long duration, one should not be discouraged quickly. Even if we do not reach this aim, it is worth the work to make it possible for a patient to walk.

COMMENTS

1. Perhaps the chief point of interest in this case is the long standing contracture deformity (twenty-one years) and its correction after this long period of time.

2. Another point of interest is the early onset of the hemiplegia, at the age of 26 years, and the classical type of the hemiplegia—complete unilateral paralysis with complete motor aphasia. At this comparatively early age, we are wont to search for specific disease affecting the blood vessels. We have failed to find any objective evidence of this, and the Wassermann has been found negative. Further, now 52 years old, with twenty-five years since the attack, the patient appears well as regards his general health.

3. We have referred to the fact that we did not fully correct the deformities of the lower extremity at our first séance. The condition of the blood vessels must be considered. This figures especially in the case of the average hemiplegic, in which the attack is later in life, as a rule, and these subjects are apt to have rather marked arteriosclerosis.

4. It is observed that the hand deformity has not improved to the same degree as that of the lower extremity. This is probably due to the more delicate action of the hand muscles. It is also largely due to the difference of the contraction. In the lower extremity it was a condition of real contracture, and the limb when corrected and properly treated, to use an apt expression, "stayed put." In the upper extremity, especially the hand, there is contraction. But there is the knife blade spasticity. The fingers can be readily straightened, but they snap back. In other words, they do not "stay put." This condition is not very amenable to the treatments we have considered.

5. The favorable results in this case indicate clearly that there is no time limit for improvement in hemiplegia. Franz, Sheetz and Wilson[6] have recently reported improvements in five cases of hemiplegia of long duration, and we feel certain that reports of such cases should stimulate all the physicians to resort to orthopedic methods in similar cases, no matter at what stage they are seen.

6. We might recall the emphasis recently laid by Mayer[7] that the deformities encountered in hemiplegics should be prevented by maintaining the paralyzed limbs in the proper position by means of splints.

7. We had a considerable number of patients in the Montefiore Hospital who, when admitted within the first year after the apoplectic attack, were placed in our service. We put the knees and feet in splints, and the patients were able to walk within a short time.

This case further suggests that: A. Patients with hemiplegia should receive proper orthopedic treatments as soon as they regain consciousness.

B. Light massage should be used, and active and passive exercises early. As soon as the patient is able, he should be urged to stand up.

C. Even in the old and neglected cases, great improvement can be obtained, especially in walking; hence one should work patiently on any hemiplegic who comes under his professional care.

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6. Franz, S. I.; Sheetz, M. E., and Wilson, A. A.: The Possibility of Recovery of Motor Function in Long-Standing Hemiplegia, The Journal A. M. A., Dec. 18, 1915, p. 2150.

7. Mayer, L.: The Necessity for Orthopedic Training in Hemiplegia, Berl. klin. Wchnschr., June 7, 1915; abstr. The Journal A. M. A., July 24, 1915, p. 366.

REPORT OF A CASE OF BANTI'S DISEASE

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The rareness of this disease is my reason for reporting this case:

History.—Mrs. R. J., aged 63, married, consulted me, April 7, 1915, complaining of constipation, gas in stomach and bowels, loss of strength and weight and pain in left side at margin of ribs. The patient had three healthy children, was doing housework and had always worked hard. The family history was negative. She had had children's diseases with good recovery, chronic cough for twenty years, had been constipated since childhood, and for the previous twelve years had suffered from periodic attacks of cyanosis involving the hands and feet. She had had malaria when a child, but no other fever. Menstrual history was negative. The menopause had occurred twelve years previously. There were no unexplained miscarriages.

Present Trouble.—Although the patient had been constipated for years and had suffered much from intestinal putrefaction, she did not become incapacitated until September, 1914. At that time mucous colitis with much gas and considerable abdominal pain was present. She had lost weight, weighing 156 pounds in 1911, and in December, 1914, 122 pounds. She was weak, unable to do much work, and had a poor appetite. There was no nausea or vomiting except that precipitated by severe coughing. There was pain in the left hypochondrium. Lactic acid bacillus tablets, sodium cacodylate administered hypodermically and rest improved her condition so she was able to do her housework. However, the pain in her left side continued. It was a dull ache, occasionally sharp and referred to the ribs. For twelve years she had noticed periodic attacks of a cold cyanotic condition of the hands and feet, which apparently had no relation to the intensity of the pain in the region of the spleen, and was relieved by heat. For the last few years she has suffered from the cold. She had never had palpitation of the heart or difficulty in breathing even after exercising. Her greatest complaint, when I was first called, was the pain in the region of the spleen, which had become very severe after an unusually hard trip.

Physical Examination.—The patient was emaciated and weak, and her skin was the color of bronze. Although of a dark complexion, she had noticed her skin becoming this color for the last twelve years. The lips and the tips of the ears and nose were dusky; the sclera was pale but not discolored; the neck and heart were negative; the breath sounds were high pitched, and expiration was prolonged as in chronic bronchitis; the abdomen was flaccid and tympanitic, and there was a slight general tenderness, but no localized area; the liver was negative. A mass was felt in the left hypochondrium, extending 3 inches below the costal margin. This was notched, the edge was easily palpated, and the surface was smooth and hard and very tender. The pelvis was negative. Reflexes were present and normal. The hands and feet were cyanotic and cold, but not swollen. The temperature was normal at this examination and at all subsequent readings.

Laboratory Findings.—Blood: Hemoglobin, 90 per cent.; red cells, 5,600,000; white cells, 9,500; smear normal, except for slight paling of red cells (no plasmodium of malaria). Differential: neutrophils, 53 per cent.; acidophils, 3 per cent.; small lymphocytes, 26 per cent.; large lymphocytes, 14 per cent., and transitionals, 4 per cent. Wassermann and tuberculin reactions were negative. The sputum and urine were repeatedly negative. The high blood count proved to be due to the cyanotic condition of the finger from which the blood was taken. Subsequent counts gave a slight anemia of the secondary type with a constant increase in the large lymphocytes averaging 10 per cent.

Diagnosis, Treatment and Course.—On these findings a diagnosis of Banti's disease was made. The general condition of the patient prohibited a splenectomy, so tonics, sodium cacodylate and Roentgen-ray treatments were resorted to. After six treatments the pain and soreness were much relieved, but the patient developed a herpes zoster on that side, and the use of the Roentgen ray was discontinued. The active herpetic lesion cleared up in ten days, but left an itching, smarting and burning pain that resisted all local treatment and finally had to be controlled by morphin for several weeks. After recovery, the patient was very weak, but complained of no pain in the spleen. In October, 1915, she went to Florida thinking the climate would benefit her. In December, she began to bloat and lose strength, and as this continued she returned here, February 4, at which time I saw her. The abdomen was markedly distended with fluid and the legs were swollen to the knees. The patient stated that she had been bloated in this manner for four weeks and that her legs had been swollen for two weeks. About the middle of January, she had had hematemesis which was followed for several days by the passing of tarry stools. Although very weak she had stood the trip well and was free from pain. The bronze discoloration of the skin had disappeared and been replaced by a yellowish tinge. The sclera, however, showed no icteric discoloration. The next day I withdrew 6 quarts of fluid from her abdomen. This fluid was of a light amber color; the specific gravity was 1.008, the albumin, 1 per cent., and it contained a few lymphocytes and endothelial cells. She passed only a few ounces of urine during the twenty-four hours, but it was still negative and remained so except for the appearance of bilirubin. The secondary anemia had increased. After the tapping, the spleen was easily felt and, though not so tender, was in the same condition as before. I withdrew about 2 gallons of fluid, February 15, and again March 3 and April 1. After the last tapping the spleen was found to be much contracted.

The patient had felt her case to be hopeless and with this apparent sign of improvement she was so much encouraged that she left her bed, ate at the table with a better appetite than she had had for many months, and sat up for several hours. Much to her disappointment ascites again developed in ten days. On the advice of another physician she was operated on, April 27, for cirrhosis of the liver, a Talma operation being done. Two and one half gallons of fluid were drained off. The liver was found to be small and hard and the spleen only slightly enlarged and surrounded by firm adhesions. The patient rallied well from the operation and progressed nicely for several days, when she died from gastro-intestinal hemorrhages.

COMMENT

The absence of any demonstrable etiology, the chronicity of the splenic pain, the pigmentation of the skin, the splenomegaly, the hematemesis, and finally the ascites with hemolytic changes, make this, I believe, a typical case of Banti's disease.

The periodic attacks of cyanosis may or may not have been part of the syndrome.

KNEE BLOCK FROM AVULSION OF BONE FRAGMENT BY POSTERIOR CRUCIAL LIGAMENT

ROSCOE R. KAHLE, PH.B., M.D., COLUMBUS, OHIO
Surgeon to Grant Hospital

History.—K., man, aged 24, athletic and muscular, referred by Dr. E. L. Harney, stepped from an express wagon down on an ice cream freezer, Sept. 15, 1915. The cracked ice on which he stepped with his right foot gave way, causing outward rotation. With the leg in abduction and the knee semiflexed, he fell to the ground. From his description of the fall it is quite impossible to determine the precise nature of the wrench which his knee received. He arose without difficulty, walked as usual for about two blocks, when his knee suddenly became locked, and he fell helpless. The examining physician found the knee partially flexed and fixed. Only slight motion in either direction could be borne. All maneuvers to cause complete extension were fruitless. A fixation splint was applied pending Roentgen examination.

Examination.—The roentgenograms revealed a fragment of bone free in the joint cavity. This had been broken ante-

riorly from the outer edge of the inner condyle of the femur. This location corresponds to the femoral attachment of the posterior crucial ligament. Our diagnosis was that, at the time of the injury, the posterior crucial ligament was brought to great tension, causing rupture at its femoral insertion. Manipulative efforts to dislodge the fragment and facilitate extension were of no avail. The surgical removal of the bone block, therefore, seemed imperative.

Operation and Result.—A large U-shaped skin flap was lifted, exposing the joint area. With a second scalpel a vertical incision along the inner margin of the patella opened the joint cavity. By the aid of retractors a fair view of the joint was secured. The small detached piece of bone, shown in the roentgenograms, was readily located and removed. A second fragment, loose but undetached, was taken away. It was observed that the foremost fibers of the ligament had been instrumental in the avulsion of the fragments. The balance of the ligament was firmly attached to the femur. The operation was completed without drainage. The leg was fully extended, and a plaster cast with a knee window was applied and left in place for about two months. The pain and swelling during convalescence were negligible.

For the past four months, Mr. K. has been walking without assistance, and he now walks without a limp. Flexion is nearly normal, and will probably be entirely so in a few more months.

COMMENT

In a very complete discussion[1] of similar, though not identical, knee injuries, Jones of Liverpool and S. Alwyn Smith of Winnipeg state that rupture of the posterior crucial ligament alone is a rare accident. Pagenstecher has reported one case treated by suture, though he does not mention any separation of bone fragments.

It is interesting to note that in most cases of complete dislocation of the knee joint, with rupture of both crucials, serviceable joints are the rule after prolonged fixation in complete extension. There is, therefore, no valid indication for primary operation to restore ruptured crucials, except when complicated by bone fragments which prevent complete extension of the joint. The most common error in management is the disposition to move the joint before sufficient time has elapsed for sound healing.

350 East State Street.

SUDDEN BLINDNESS ASSOCIATED WITH CHOKED DISK AND NASAL SINUS DISEASE

EDWARD J. BROWN, M.D., MINNEAPOLIS

Mrs. Rose H., aged 49, Russian Jewess, referred by another poor patient, came to me, Jan. 31, 1916, complaining that her left eye had become suddenly blind three weeks before, and that she had consulted several private oculists, besides going to the university clinic, without benefit. At the clinic she had been advised to have her teeth removed, and that was done two weeks before her visit to my office. The patient had suffered from pain in her head (temples) and back and had experienced more or less dizziness. There had been a lacrimal abscess fifteen years before and she still suffered from lacrimal obstruction. Otherwise the history was negative. She reported that one physician had made a urinalysis with negative result.

Vision of the right eye was normal; the left could dimly recognize a hand at a distance of 18 inches. Efforts to map out the field were unsuccessful, but the inner (nasal) field seemed to be wholly wanting. The right pupil was 3 mm. in diameter and of normal reaction, the left was 7 mm. and immobile. The retina and disk of the left eye were markedly swollen, and there was a small hemorrhage on the inferior quadrant of the disk. The patient denied having any nasal trouble, but I found a septum markedly deviated to the right, atrophy of the left inferior turbinal, and very large middle turbinal, the latter covered with crusts. She refused to have any nasal treatment, but consented to wash the nares with alkaline solution at home. Transillumination was negative.

Five days later the woman returned. The eye condition remained as at first visit except that the left counted fingers at 5 feet. Pus was flowing freely from the left middle fossa posteriorly, as shown by the Holmes nasopharyngoscope.

The middle turbinate and the ethmoid cells were at once removed, and the woman declared that she could see better directly after the operation.

On the following day, the sixth, she could count fingers at 20 feet. I have not seen the woman since, but she reports still further improvement.

524 Syndicate Building.

1. Jones, Robert, and Smith, S. A.: Brit. Jour. Surg., July, 1913.

Therapeutics

BLOOD PRESSURE

The study of the blood pressure has become a subject of great importance in the practice of medicine and surgery. No condition can be properly treated, no operation should be performed, and no prognosis is of value without a proper consideration of the sufficiency of the circulation, and the condition of the circulation cannot be properly estimated without an accurate estimate of the systolic and diastolic blood pressure. However perfectly the heart may act, it cannot properly circulate the blood without a normal tone of the blood vessels, both arteries and veins. Abnormal vasodilatation seriously interferes with the normal circulation, and causes venous congestion, abnormal increase in venous blood pressure, and the consequent danger of shock and death. Increased arterial tone or tonicity necessitates greater cardiac effort, to overcome the resistance, and hypertrophy of the heart must follow. This hypertrophy always occurs if the peripheral resistance is not suddenly too great or too rapidly acquired. In other words, if the peripheral resistance gradually increases, the left ventricle hypertrophies, and remains for a long time sufficient. If, from disease or disturbance in the lungs, the resistance in the pulmonary circulation is increased, the right ventricle hypertrophies to overcome it, and the circulation is sufficient as long as this ventricle is able to do the work. If either this pulmonary increased pressure or the systemic increased pressure persists or becomes too great, it is only a question of how many months, in the case of the right ventricle, and how many years, in the case of the left ventricle, the heart can stand the strain.

If the cause of the increased systemic tension is an arterial fibrosis, sooner or later the heart will become involved in this general condition, and a chronic myocarditis is likely to result. If, on the other hand, there is a continuous low systemic arterial blood pressure, the circulation is always more or less insufficient, nutrition is always imperfect, and the physical ability of the individual is below par. It is evident, therefore, that an abnormally high blood pressure is of serious import, its cause must be studied, and effort must be made to remove as far as possible the cause. On the other hand, a persistently low blood pressure may be of serious import, and always diminishes physical ability. If possible, the cause should be determined, and the condition improved.

No physician can now properly practice medicine without having a reliable apparatus for determining the blood pressure both in his office and at the bedside. It is not necessary to discuss here the various kinds

of apparatus or what is essential in an apparatus for it to give a perfect reading. It may be stated that in determining the systolic and diastolic pressure in the peripheral arteries, the ordinary stethoscope is as efficient as any more elaborate auscultatory apparatus.

It is now generally agreed by all scientific clinicians that it is as essential — almost more essential — to determine the diastolic pressure as the systolic pressure; therefore the auscultatory method is the simplest, as well as one of the most accurate in determining these pressures. Of course it should be recognized that the systolic pressure thus obtained will generally be some millimeters above that obtained with the finger, perhaps the average being equivalent to about 5 mm. of mercury. The diastolic pressure will often range from 10 to 15 mm. below the reading obtained by other methods. Therefore, wider range of pressure is obtained by the auscultatory method than by other methods. This difference of 5 or more millimeters of systolic pressure between the auscultatory and the palpatory readings should be remembered when one is consulting books or articles printed more than two years ago, as many of these pressures were determined by the palpatory method.

Sometimes the compression of the arm by the armlet leads to a rise in blood pressure.[1] It has been suggested that the diastolic pressure be taken at the point where the sound is first heard on gradually raising the pressure in the armlet.

In some persons the auscultatory readings cannot be made, or are very unsatisfactory, and it becomes necessary to use the palpation method in taking the systolic pressure. In instances in which the auscultatory method is unsatisfactory, the artery below the bend of the elbow at which the reading is generally taken may be misplaced, or there may be an unusual amount of fat and muscle between the artery and the skin.

The various sounds heard with the stethoscope, when the pressure is gradually lowered, have been divided into phases. The first phase begins with the first audible sound, which is the proper point at which to read the systolic pressure. The first phase is generally, not always, succeeded by a second phase in which there is a murmurish sound. The third phase is that at which the maximum sharp, ringing note begins, and throughout this phase the sound is sharp and intense, gradually increasing, and then gradually diminishing to the fourth phase, where the sound suddenly becomes a duller tone. The fourth phase lasts until what is termed the fifth phase, or that at which all sound has disappeared. As previously stated, the diastolic pressure may be read at the beginning of the fourth phase, or at the end of the fourth phase, that is, the beginning of the fifth; but the difference is from 3 to 10 mm. of mercury, with an average of perhaps 5 mm.; therefore the difference is not very great. When the diastolic pressure is high, for relative subsequent readings, it is much better to read the diastolic at the beginning of the fifth phase.

It is urged by many observers that the proper reading of the diastolic pressure is always at the beginning of the fourth phase. However, for general use, unless one is particularly expert, it is better to read the diastolic pressure at the beginning of the fifth phase. There can rarely be a doubt in the mind of the person who is auscultating as to the point at which all sound ceases. There is frequently a good deal of doubt, even after large experience, as to just the moment at which the fourth phase begins. With the understanding that the difference is only a few millimeters, which is of very little importance, when the diastolic pressure is below 95, it seems advisable to urge the reading of the diastolic pressure at the beginning of the fifth phase.

The incident of the first phase, or when sound begins, is caused by the sudden distention of the blood vessel below the point of compression by the armlet. In other words, the armlet pressure has at this point been overcome. Young[2] believes that the murmurs of the second phase, which in all normal conditions are heard during the 20 mm. drop below the point at which the systolic pressure had been read, is "due to whirlpool eddies produced at the point of constriction of the blood vessel by the cuff of the instrument." The third phase is when these murmurs cease and the sound resembles the first, lasting he thinks for only 5 mm. The third phase often lasts much longer. He thinks the fourth phase, when the sound becomes dull, lasts for about 6 mm.

(To be continued)

1. MacWilliams and Melvin: Brit. Med. Jour., Nov. 7, 1914.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

STANDARD RADIUM SOLUTION FOR DRINKING (1 microgram Ra).—A solution containing radium chloride equivalent to 1 microgram of radium (Ra) and 1.3 mg. of barium chloride per bottle of 60 Cc.

Actions and Uses.—See Radium (N. N. R., 1916, p. 266). In view of the small barium content, it is claimed that the physiologic action of barium may be ignored.

Dosage.—See Radium (N. N. R., 1916, p. 267). Contents of one bottle after each meal.

Manufactured by the Standard Chemical Co., Pittsburgh, Pa. (The Radium Chemical Co., Pittsburgh, Pa.). No U. S. patents or trademarks.

One Gm. of crystallized barium chloride is added to 40 liters of distilled water and the solution allowed to stand for a day; then 800 micrograms of radium element in the form of a solution of 60 per cent. pure radium chloride is added, together with 40 Cc. of normal hydrochloric acid. This solution, after analysis by the emanation method to confirm its radium content, is then delivered into the bottles by means of an automatic pipet delivering 50 Cc. of the solution, which contains, as stated, 1.3 mg. of barium chloride and 1 microgram of radium element. The bottles are then filled almost full to the stopper with distilled water.

The amount of radium may be determined by the "emanation method" of Rutherford and Boltwood as described in Rutherford's "Radioactive Substances and Their Radiations," Cambridge, 1913, p. 659.

2. Young: Indiana State Med. Assn. Jour., March, 1914.

Fuel Requirement.—About 2,500 calories are required in the daily food of man whose occupation is of sedentary character. As a matter of fact, statistics show that the inhabitants of cities take this amount of fuel daily. The latest statistical proof that the food supply of a great city is regulated by the needs of its inhabitants may be found in the report of Gautier which shows that in Paris an average of 2,500 calories of energy are daily supplied to each inhabitant.—Lusk, The Fundamental Basis of Nutrition.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

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SATURDAY, JULY 1, 1916

METABOLISM IN PREGNANCY

The metabolism of pregnancy has received comparatively little study, particularly in the human species, for which the opportunities of suitable investigation are not always easily procurable under circumstances that make scientific observations entirely satisfactory. The few researches of importance which are on record and commonly quoted by writers on the subject are almost entirely confined to the latter part of the period of gestation, usually just prior to parturition. Experimental studies which have been conducted on animals during the earlier periods of pregnancy have indicated in several instances that there may be a negative nitrogen balance — an apparent loss of protein to the organism at that time. Thus Hagemann[1] concluded that the formation of the fetus occasions a loss of protein from the mother's body, even when there is an abundance of nourishment. This suggestion that the development of the fetus is accompanied by the destruction of maternal protoplasm has led Ver Ecke[2] to make the somewhat dramatic statement that gestation constitutes a sacrifice of the individual for the good of the species. In this sense the embryo might seem a parasite preying on the maternal protein.

Several years ago Murlin[3] of the Cornell University Medical College in New York City, to whom we owe excellent studies of metabolism in pregnancy, summarized the findings up to that time. With respect to the first half of this period of fetal development, he said, the weight of evidence, from observations on animals, is that a period of diminished retention or of minus nitrogen balance is likely to occur at about the stage which corresponds to the period of morning sickness of women. With respect to the second half of the period of pregnancy there has been perfect agreement that more nitrogen is regularly ingested than is excreted, provided a sufficient supply of protein and potential energy is available in the diet.

Until recently no one has attempted to follow extensively the nitrogen balance in pregnant women earlier than the sixteenth week. This paucity of information lends special value to the studies lately reported from the obstetric clinic of the Johns Hopkins Hospital by Wilson.[4] One case in his records, in which the period of estimation of the nitrogenous metabolism probably extended from the tenth to the fourteenth week of pregnancy, is believed to represent the earliest pregnancy on which such experiments have been carried out in women for any extended period of time. In this person, storage of nitrogen, rather than the expected loss, was found to be taking place from the time the observations were begun until their close. The actual gain amounted to 60 gm. of nitrogen in these four weeks. Additional observations, old and new, show further that storage of nitrogen in the healthy woman who goes through a normal pregnancy continues through the entire duration of the intrauterine development, being most marked during the last few weeks, when the fetal needs are at a maximum.

Wilson suggests that in the pregnant woman storage of nitrogenous products begins at a much earlier period than has hitherto been supposed; possibly the organism may acquire the capacity for storing nitrogen from the very beginning of pregnancy. During the tenth to fourteenth weeks of pregnancy, regarding which the new facts are now available to indicate a retention of several grams of nitrogen per day, the daily need of the developing ovum must be extremely small. The total nitrogen content of the entire ovum is estimated not to exceed 3 gm. at this period. Accordingly it is reasonable to assume, with Wilson, that most of the nitrogen stored must have been added to the general maternal organism in some form, possibly to be drawn on later by the developing tissues when the need becomes greater. It is not unlikely that a portion, at least, is utilized in the growth and hypertrophy of the uterus and the breasts. The uterus increases in size up to 800 or 1,000 gm., and may represent nearly 40 gm. of nitrogen. An enlargement of the breasts amounting to 500 gm. would account for 17 gm. of nitrogen. Even the sum of these, 57 gm., will not account for the utilization of the far larger total gains of nitrogen reported during pregnancy.

Evidently, then, the "nitrogen capital" of the maternal organism is increased during pregnancy. The reserve may become exhausted during the puerperium and the period of lactation. Of course, nausea, vomiting and gastro-intestinal disturbances so frequently noted in early pregnancy at once restrict the food intake and produce a different story in the metabolic balance. But Wilson remarks that in the experience of his clinic at least half of the patients go through the entire period of pregnancy without any of these

1. Hagemann: Arch. f. Anat. u. Physiol., 1890, 577; Inaug. Diss., Erlangen, 1891.
2. Ver Ecke, A.: Les échanges matériels dans leur rapports avec les phases de la vie sexuelle, Mém. courronnés de l'Acad. roy. de belgique, 1901, xv, No. 7.
3. Murlin, J. R.: Metabolism of Development, II, Am. Jour. Physiol., 1910, xxvii, 177.
4. Wilson, K. M.: Nitrogen Metabolism During Pregnancy, Bull. Johns Hopkins Hosp., 1916, xxvii, 121.

disagreeable symptoms. The question therefore arises whether women suffering from such disturbances are to be regarded as perfectly normal. At any rate it has become unlikely that normal pregnancy represents a real sacrifice of the old individual for the new. Perhaps it is an instance, as it has been called, of "homogeneous and harmonious symbiosis" which is "not an occasion of loss but of profit to the maternal organism as well as to the embryo." [3]

CAVEAT VENDOR!—THE NEW CONSCIENCE

The Supreme Court of the United States has recently handed down a decision that is of more than ordinary significance to those who are interested in truth and decency in advertising. In effect, the court has held that an advertiser may be guilty of fraud if, through misrepresentation, he leads a purchaser to invest in his goods, even though the goods advertised are worth the money asked for them. A real-estate company had used the United States mails to advertise some Florida land for sale. The company was indicted for using the mails to defraud on the ground that false representations had been made concerning the land. It was not denied, in the indictment, "that the land was worth fully as much as was to be obtained therefor." The lower court, before which the case was tried, held that the business was legitimate on the ground that it was not an offense against the statute to raise the expectations of a purchaser, even if those expectations were not fulfilled, provided the purchaser was given value received for his money.

The United States Supreme Court, however, with that greater breadth of vision for which our greatest tribunal has distinguished itself, took a more human and equitable view of the matter. Justice McKenna, who wrote the opinion, declared: "An article alone is not necessarily the inducement and compensation for its purchase. It is in the use to which it may be put, the purpose it may serve; and there is deception and fraud when the article is not of the character or kind represented and hence does not serve the purpose." It was pointed out in the decision that a number of the representations made by the real-estate company, such as the alleged fertility of the soil, the kind of roads, the presence of hotels, the alleged excellence of transportation facilities, etc., if they were false, would be in effect a scheme to defraud by leading persons to purchase the land who would otherwise not have done so.

The extension of this principle to other phases of advertising suggests many interesting questions. It would mean, for instance, that a concern which advertised a "female remedy" to cure "falling of the womb" would be guilty of fraud, if the preparation would not produce this result, even though the product might be a meritorious one as a remedy for functional dysmenorrhea. It would mean that a man who sold a mixture as a cure for consumption, which was powerless to produce such results, would be a swindler, even though his preparation might have some virtue as a cough medicine. It would mean that a product which might be efficacious as a wart-remover could not be sold as a "cancer cure" without subjecting the seller to the charge of defrauding and swindling the sick. In short, the decision means that the great purchasing public shall be given a fairer and squarer deal than it has been in the habit of getting. It means the substitution for the old Manchester doctrine of *Caveat emptor!* the more enlightened principle, *Caveat vendor!* And, surely, in no place is such a change in our economic ethics more necessary than in the sale of preparations for the relief or mitigation of disease.

STATE RIGHTS, STATE DUTIES, AND THE HARRISON NARCOTIC LAW

The decision of the United States Supreme Court in the case of *United States* v. *Jin Fuey Moy*, decided, June 5, and referred to in previous issues,[1] is a reminder that the states still have important duties to perform with respect to the sale of opium, cocain and other habit-forming drugs. The Harrison Narcotic Law may be assumed, according to the decision, to have a moral end in view as well as the collection of revenue, but the moral end must be reached through the law only as a revenue measure and within its limits as such. Any other construction would cast grave doubts on the constitutionality of the law. The possession of morphin by a person addicted to its use but not belonging to any of the classes required to register under the law is not forbidden by the law. Therefore, a physician who prescribes such a drug, not in good faith for medicinal purposes but merely for the purpose of putting it into the possession of a person addicted to its use in order that he may gratify his cravings, is not guilty of conspiring to commit an offense against the United States.

If we except the dangerous immunity which Congress has given through the sixth section of the Harrison Narcotic Law to the sale of proprietary nostrums containing opium, morphin, heroin and codein in more or less dilute forms, the federal government has now done and is doing its full duty with respect to the suppression of drug habits, so far as the drugs named in that law are concerned. In pursuance of treaty obligations which the United States not only voluntarily assumed but actually sought out and induced other nations to assume, three statutes have been enacted and are now being enforced, and these seem practically to have exhausted the federal authority under its right to regulate foreign and interstate com-

1. Antinarcotic Law Construed, General News, THE JOURNAL A. M. A., June 17, 1916, p. 1933. A New Decision Under the Harrison Act, Current Comment, June 24, 1916, p. 2073.

merce and to levy taxes. But where the power of the federal government leaves off, the power of the state begins; and if the federal government cannot make the possession of opium, morphin, cocain and other forbidden drugs presumptive evidence of possession for an unlawful purpose, unless it can show that the person in possession is required to register and to pay a federal tax, it is quite within the power of the state to enact such legislation as the situation calls for and the public welfare demands. As a matter of fact, too, if the defendant in the case just determined, or in any other similar case, did conspire as alleged with persons addicted to the use of morphin so as to put that drug into their possession, and did issue written prescriptions for the drug, merely to satisfy the cravings of the victims of the drug habit, it would clearly appear that an offense was committed against the welfare of the community in which the act was done much more serious than the mere infraction of a revenue law of the United States. And the state in which the offense was committed should hardly abandon its right of self-defense and rely for protection on the treaty-making power of the United States, or on the right of the federal government to regulate foreign and interstate commerce and to levy taxes, but should defend itself through its own police power, enacting its own laws and providing its own machinery for their enforcement.

The state can no longer plead as an excuse for inaction on its part that state laws and regulations are ineffective because of the possibility of obtaining any desired drug through foreign or interstate commerce without state interference, for the federal statutes now regulate such traffic in a reasonably effective manner, and need only active state cooperation to accomplish much more. The Harrison Narcotic Law itself recognizes the necessity of state action, and was framed with state cooperation in view. Duplicate order forms and prescriptions for habit-forming drugs required by the federal law to be preserved and statements to be filed in the offices of collectors of internal revenue are all by law open to inspection by the state and municipal officials who are charged by law with the enforcement of laws and regulations governing the distribution of the drugs named in the federal act, and certified lists of all persons registered in any collection district can be obtained by such officers on the payment of nominal fees. All of the drugs under regulation that come into any state or city can therefore be easily located and traced by the state and municipal officers, and where the federal law fails and must necessarily fail because of constitutional limitations, state and municipal laws and ordinances can and should be applied. If the decision of the Supreme Court in the case of *United States* v. *Jin Fuey Moy* impels states and cities to action in this respect, it will have served a most useful purpose.

SOLDIER'S HEART

To the occupational diseases such as aviator's disease, trench frostbite and trench nephritis[1] associated with the vicissitudes of war, there is added a form of heart trouble to which soldiers are particularly liable, and which has gone under the name of "soldier's heart" or the "irritable heart of soldiers." It is not a new phenomenon, for it appears to have been recognized by American physicians during and after our own Civil War. Sir James Mackenzie and others[2] have described what they regard as a definite clinical picture, sharply defined and differentiated. The cardinal symptoms are a sense of exhaustion, breathlessness on slight exertion, a rapid pulse which becomes more rapid on the slightest attempt at action, pain over the precardial region or along the left costal margin, and a vasomotor condition of greater or less stability. Sometimes nervous symptoms and high blood pressure are added to these. Murmurs, systolic in time and heard in different regions, are frequent, while a slight increase in the size of the heart is not uncommon. Periods of depression are not unusual, and the patients invalided home are often very irritable.

In 1864, during the Civil War, Hartshorne[3] published comparable descriptions of this condition, in which he emphasized the rapidity of the pulse, the acceleration of the heart's movement on the slightest exertion, the shortness of breath, and the cardiac weakness. In explanation of the genesis of these symptoms, the prevalence of tight accouterments and overexertion, particularly in the form of setting-up drills, were early suggested. The change in accouterment has failed to effect any improvement, and the discontinuance of the particular drills formerly complained of has not put an end to the condition. The theorists, therefore, are bankrupt; the disease still remains — these are the words with which one student of the subject has expressed the existing situation.

The salient features in the condition known as soldier's heart are not uncommon in civil life. They are observed in persons recovering from exhausting illness, such as typhoid fever or influenza, or after a severe surgical operation. They are seen in persons who have suffered a long mental and physical strain, particularly with insufficient sleep. All of the soldiers give an account of a very strenuous life with attendant exhaustion. Sir James Mackenzie contends that most of them give a history which can also safely be surmised to involve an infection. According to him the condition is not, properly speaking, cardiac in origin, but is the outcome of an injury to other systems, such as the central nervous system, as well as the heart. Mackenzie in particular is inclined on purely clinical

1. Trench Nephritis, editorial, The Journal A. M. A., June 24, 1916, p. 2070.
2. Discussion on the Soldier's Heart, opened by Sir James Mackenzie: Proc. Roy. Soc. Med., London, 1916, ix, Therapeutical and Pharmacological Section, p. 27.
3. Hartshorne, H.: Am. Jour. Med. Sc., 1864, xlviii, 89.

grounds to attribute the majority of the cases to bacterial and toxic influences; at any rate he believes that toxic products, whatever their origin, produce changes in the economy — in the blood, the nervous system, and the heart muscle — resulting in an impairment of these structures.

Other English physicians who have had an opportunity to study many cases prefer to preserve a more open mind as to etiology. All agree, however, that a psychic factor calls for corresponding treatment. A cheerful atmosphere confers benefit, whereas a depressing environment exaggerates the condition. The psychic condition must be treated before recovery can be expected. For this purpose the hospital with pleasant surroundings and suitable opportunities for moderate exercise seems to be the most promising device for the management of the disorder. Despite the demonstrated value of mental change, the prognosis is very uncertain, for, in the opinion of many of the army physicians, in a large number of cases the heart is permanently damaged.

All kinds of trying experiences such as a soldier's life in warfare must be exposed to inevitably puts strains on the heart. As Mackenzie has expressed it, this strain invariably finds out the impaired hearts, whether or not the impairment gives rise to physical signs of lesion. But the typical "soldier's heart" is a different entity. The heart abnormalities are only a feature, though a prominent one, in a general condition in which general exhaustion and a sense of its existence are the dominating characteristics. Doubtless both the nervous and muscular systems are involved.

QUARTERLY CUMULATIVE INDEX TO CURRENT MEDICAL LITERATURE

With the increasing amount of medical literature it has become more difficult, yet more necessary, for physicians to keep abreast of medical progress. At present there is no index which makes current medical literature accessible under a single alphabetical arrangement. The index[1] which has been issued each six months with THE JOURNAL is good so far as it goes, but it is not as inclusive as many desire, and the arrangement is not altogether satisfactory, since a reference to THE JOURNAL is necessary.

There are at the present time two other indexes to medical literature, one, the *Index Medicus*, published by the Carnegie Institution of Washington, D. C. It is so elaborate and so inclusive that it is of practical value to few but research workers. It is never up to date; the last references available in it are for 1914, unless each individual issue is consulted. The index to the 1915 volume is not yet out; the index to each volume is usually issued about August of the following year. Even with the index one must turn to the body of the book to find a reference, thus making it necessary to look in two places. The other index is the *Index Catalogue of the Library of the Surgeon-General's Office, U. S. Army*. This is a most valuable reference work, but its method of issuance is such that it cannot represent *current* literature. The letter A of the present series was published in 1896, and B in 1897. It has now reached W, which letter is not complete. Matter under the last initial is more or less up to date, but the literature under the previous initials is out of date and valuable only for research purposes. As a matter of fact, the existing indexes leave much to be desired.

It has been decided to issue an index on what is known as the "cumulative plan" which, while new in medical indexing, is not new in the indexing of general literature. In the cumulative plan each issue includes all that has appeared in previous issues of the year, the final issue being an index to the literature of the past twelve months.

The *Quarterly Cumulative Index to Current Medical Literature*[2] will be issued the middle of April, July, October and January. The April issue, already out, indexes the journals received during January, February and March; the July issue will contain in one alphabetical sequence all that appeared in the April issue, with the addition of references to journals received during April, May and June. Thus the July issue will supersede the April issue, and similarly the October issue will supersede the July issue. Each quarterly issue will contain a complete index of the literature of the year up to the first day of the month of issue. The January issue will be a complete index to the literature of the preceding year, and will be bound in cloth for permanent preservation.

POSTGRADUATE WORK AT HOME

Many physicians, for financial reasons, or from the nature of their practice or location, find it impossible to leave their homes to take postgraduate work. Many of these would be glad to add to their knowledge of modern diagnostic methods and to improve their skill if such instruction could be made accessible to them.

Efforts to meet this need are now being made in several states. The Medical Society of the State of Pennsylvania, so far as we know, was the first state association to establish graduate instruction in county societies. Many physicians well qualified as teachers were found who were willing to conduct clinics and discuss medical topics before county societies if their

1. Hereafter the index published in THE JOURNAL at the conclusion of each volume will contain references only to material in THE JOURNAL, including abstracts of articles in the Current Medical Literature department, but not references to titles. The index to THE JOURNAL will be more complete in that each subject entry will be followed by the name of the author in brackets, and in the author index each name will be followed by a brief clue to the subject of the article. The Guide to Current Medical Literature will be discontinued with the present issue.

2. See advertising pages 10 and 11 of this issue.

traveling expenses were paid. This plan was quite successful for a number of years, and that success would doubtless have been continued if adequate supervision of it had been maintained by the state society.

Another plan was adopted about two years ago by the Committee on Post-Graduate Instruction of the Medical and Chirurgical Faculty of Maryland. Among the younger faculty members in the local medical schools, a number of men well qualified to give graduate instruction were found who could be spared from their duties at certain periods of the year. The offer was made to send one or two of these men to give courses of lectures and clinics to county societies desiring them, the only charge made being for traveling expenses. Last year the plan was tried at Hagerstown, and so much interest was aroused that this year the state committee expects to establish ten or twelve such courses. This year it is planned also to have the teachers make use of afternoon hours by giving individual instruction in diagnostic methods, auscultation, percussion and similar subjects.

In Michigan during the past year the development of a public health measure has resulted in bringing graduate medical instruction to the local physicians. The state board of health established clinics throughout the state for the examination of patients suspected of having tuberculosis. Specially qualified clinicians have been selected by the board to have these clinics in charge, who, in addition to examining the patients and instructing them how to live, demonstrate to local physicians the later and more efficient methods of examination and diagnosis. In Ohio the Committee on Medical Education of the state medical association has adopted a plan somewhat similar to the one in Maryland whereby teachers from the local medical schools have consented to give lectures and demonstrations on special subjects to physicians in the small cities and towns of that state.

Another plan explained in greater detail on another page[1] is being tried in North Carolina by the state board of health and the state university. A Boston physician has been engaged to make a weekly circuit of six cities in the eastern part of North Carolina for seventeen weeks and to give a series of clinical lectures and demonstrations. A Chicago physician is conducting a similar class in the western part of the state. Classes have been arranged in these cities, and fees are charged sufficient to pay the traveling expenses and to provide a nominal remuneration for the instructor. The courses are on diseases of children, in connection with which, it is stated, special attention is to be given to the latest methods of infant feeding and laboratory methods of diagnosis. If these courses are successful, classes in other subjects will doubtless be established not only in North Carolina but in other states also.

By these several schemes, therefore, a field of endeavor has been opened which is worthy of being widely extended. In this way physicians who otherwise cannot secure graduate instruction will be enabled to do so, and thus render better service to their patients.

Current Comment

THE ARMY MEDICAL SERVICE AS A CAREER: AN OPPORTUNITY

The glamor of military preparedness from a national point of view should not be allowed to obscure the fact that from the standpoint of the individual there has never been so good an opportunity as at present for the physician who desires to enter as a career the medical corps of the army. For competent men there is the certainty of immediate appointment, and the chances of rapid promotion are all that any reasonable person could wish. Through the operation of the recently enacted army reorganization law there are now more than 100 vacancies to be filled; and as the annual increases for which the law provides are made from year to year within the next five years, the men now appointed, if they have proved their fitness for the service, will be rapidly advanced to higher grades. If the president, without waiting for the expiration of the stated annual periods fixed by the act, should exercise the right given him in event of actual or threatened war or similar emergency to organize the entire increase authorized by the law, or any part thereof, that he might deem necessary in addition to the one fifth that he is required to organize annually, appointments in the near future will be even more numerous and promotions more rapid. Of course the tenseness of our international relations and a natural spirit of resentment for the unprovoked destruction of American lives tend just now to drive every man possessed of any good red blood toward the military arm of our government, and a physician inclines naturally toward service in the medical corps. But leaving all that aside and looking on the service as offering a career in time of peace as well as in time of war or threatened war, it will be found to invite as do few other fields of medical endeavor. It offers a more than fair living wage, under most congenial conditions, a wage and condition that are certainly superior to those pertaining to the average medical practice. To the physician of a scientific turn, its opportunity for rational practice along strictly scientific lines presents an almost irresistible appeal. Opportunities for study and research in favorable environments are numerous, and officers are encouraged to avail themselves of them. The sacrifice of personal liberty of action which the officer must make for the efficient operation of the service is hardly any greater, if as great, as the surrender of his own independence that all successful practitioners, and many unsuccessful ones, make to the whims and caprices of their patients. While the foregoing applies to the army, it must not be forgotten that the navy also offers opportunity to physicians, but of different

1. Graduate Medical Classes in North Carolina, THE JOURNAL A. M. A., this issue, p. 66.

kind. Applicants who successfully pass examinations attend the course of instruction at the Naval Medical School, during which time they receive a substantial salary. At the end of this course, if successful, they are commissioned as assistant surgeons in the navy. A review of recent advances in medical science — particularly in the field of hygiene — indicates that many of the most significant discoveries have been the result of research conducted by officers of the U. S. Army and Navy Medical Corps. The work is not, as many imagine, a dry routine. Exceptional opportunity is offered for independent observation and research. The man of an investigative turn of mind need not be lost as a mere unit in a government bureau, but may express his personality and receive the reward of his personal endeavor.[1]

TECHNICALLY GUILTY—MORALLY JUSTIFIED

A little after 10 p. m., Thursday, June 22, and after being out nearly a week, the jury in the Wine of Cardui case brought in a verdict for the plaintiff and assessed the damages at 1 cent. The Chattanooga Medicine Company charged the American Medical Association with having libeled it when THE JOURNAL declared, among other things, that the business had been built on deceit, and that Wine of Cardui was a vicious fraud. For this alleged libel it asked that it be given $100,000.00; it was given $0.01. As most of our readers remember, two suits were originally brought against the Association and the Editor of THE JOURNAL. One was a personal suit for $200,000, brought by John A. Patten, formerly chief owner of the Chattanooga Medicine Company; the other was a partnership suit for $100,000 brought by John A. Patten and his brother, Z. C. Patten, Jr., doing business as the Chattanooga Medicine Company. The suits were based on two articles that appeared in THE JOURNAL, April 11, 1914, and July 18, 1914, respectively. The cases came to trial March 21, 1916. On April 26, in the middle of the trial, John A. Patten died, and the personal suit was automatically abated. The partnership suit, however, was continued and this case went to the jury Friday, June 16. The case is by far the most important of its kind that has ever been tried. In addition to 498 depositions which the "patent medicine" concern took through the South from women and from doctors of a certain type, the company also put 97 witnesses on the stand to testify in its behalf. The American Medical Association took only 8 depositions but did put on the stand 93 witnesses, among whom were some of the best known physicians in the country. The trial and the facts that led up to it could furnish texts for many interesting comments. The spectacle of a scientific organization, in its attempt to safeguard the public health, having to assume responsibilities that rightly belong to state or federal agencies, is but one of several anomalies that characterize this case. Viewing all the facts in the case and remembering the heavy damages asked by the plaintiff, the medical profession may interpret the verdict thus: Technically guilty; morally justified! To the Association a moral triumph; to the "patent medicine" interests a Pyrrhic victory.

AN INCIDENT IN THE WINE OF CARDUI CASE

Several physicians from the South have testified as witnesses for the American Medical Association in the Wine of Cardui case. In many instances, necessarily, the evidence dealt with the case-histories of certain patients. In order to protect these patients from any publicity, the physicians who testified specially requested that the names of the patients need not be given in open court. To this the Court agreed, holding that the names should be given in confidence to the lawyers for the manufacturers of Wine of Cardui. Soon after some of these Southern physicians reached home they reported that statements had been made by strangers to some of these women and their relatives that their names had been made public and serious reflections had been made upon their reputations in court. The natural result of these statements, by whomsoever circulated, has been to create local prejudice against the physicians who testified. Some of these physicians declare that they have been in danger of bodily violence and have been put in a false and unenviable light in their communities. The Court, on having this matter brought to his attention, made a statement[1] relative to it which becomes part of the record of the case.

FOURTH OF JULY ANTICIPATION

Before our next issue another Fourth of July will have passed. How will it be celebrated? Has the Mexican crisis created a deeper and more sincere patriotism than that usually shown by the din and destruction from fireworks? Will there be a retrogression in the methods of celebration, or are the saner methods to prevail? Will the result of the celebration this year show a continuation of the more rational methods of the last two or three years? We hope that it will. Last year the injuries numbered 1,165, including deaths, only one of which was from lockjaw. This was in marked contrast to conditions in 1903, when there were 4,449 injured, including 466 killed, with 406 deaths from lockjaw. It is too much to hope that the old method of celebration has been entirely uprooted; some injuries from the use of fireworks next Tuesday are bound to occur. It is worth while, therefore, to repeat the suggestions printed in previous years for prophylaxis against tetanus and for the treatment of Fourth of July injuries:

1. Carefully and thoroughly remove every particle of foreign matter from the wound, laying it open; an anesthetic should be given if necessary.

2. Dry the wound thoroughly, and paint it and the surrounding parts as carefully as possible with iodin, or else cauterize it thoroughly with a 25 per cent. solution of phenol (carbolic acid) in glycerin or alcohol.

1. Preliminary examinations for appointments to the Army Medical Service will be held July 17 and August 14. Information as to details can be obtained by addressing the Surgeon-General of the Army, Washington, D. C. The next examination for appointments in the medical corps of the navy will be held August 7 at several different places. Full information regarding the physical and professional examinations, with instructions as to the proper method of submitting formal application, may be obtained by addressing the Surgeon-General of the Navy, Navy Department, Washington, D. C.

1. See page 51.

3. Apply a loose wet pack, using a solution of some such antiseptic substance as boric acid or alcohol.

4. As soon as possible inject intravenously or subcutaneously 1,500 units of antitetanic serum and continue the injections if indications of possible tetanus arise.

5. In no case close the wound. Allow it to heal by granulation. Remove the dressings and packing each day and apply fresh ones.

PREPAREDNESS

If war comes — and certainly it does not seem far off — physicians of the United States will be called on in far greater numbers than can be secured from the regular army, the militia, and the medical reserve corps. In England, France, Germany, and in other warring European nations, the war was but a few weeks old when an appeal went out to civilian physicians. In all countries the response was as hearty and complete as might be expected from members of the medical profession. While it seems improbable that such an urgency will develop in this country, nevertheless it may. The government may rest assured that when needed members of our profession will be ready. Physicians who feel that they will respond should inform themselves as to the duties that will devolve on them. During the last few years THE JOURNAL has published many articles on military medicine. These may be found by a reference to the index numbers of THE JOURNAL. A few months ago THE JOURNAL published[1] a series of articles which will be found helpful.

QUO WARRANTO PROCEEDINGS AGAINST THE ASSOCIATION

On June 27 the state's attorney of Cook County, Illinois, acting under mandamus issued by the courts, commenced *quo warranto* proceedings against the American Medical Association and its trustees. The action concerns the right, under the Illinois law, of a "corporation not for profit" to elect its officers at meetings held outside of the state of Illinois, and to hold such elections through delegates instead of by a vote of the individual members. As our readers know, this matter has been in the courts some five and one-half years. But the various procedures have been so wrapped up in legal technicalities that it is impossible to make a clear statement without taking too much space. Suffice it to say that this action brings the American Medical Association into the case for the first time. As this suit was entered just as we go to press and the papers have not yet been served, a further statement cannot be made at this time. It should be added that the question at issue is one that concerns all societies and organizations chartered under that part of the Illinois law which provides for "corporations not for profit."

1. A pamphlet entitled "What the Civilian Doctor Called to Active Service Should Know," reprinted from THE JOURNAL, Feb. 5, 12 and 19, 1915, will be sent on receipt of a request accompanied by a two-cent stamp.

Preparation for Writing.—When a man writes from his own mind, he writes very rapidly. The greater part of a writer's time is spent in reading in order to write; a man will turn over half a library to make one book.—Samuel Johnson.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

New Hospital Building.—Leland Stanford Junior University is planning to erect a new hospital during the present summer at a cost of $500,000.

New Medical Scholarship.—Another scholarship, amounting to $400 per annum, to be known as the William Watt Kerr scholarship, has been established at the University of California by the medical alumni of that institution.

To Wipe Out Hookworm.—The state board of health announces that it will hereafter issue hookworm certificates to all miners examined whether free, cured or suffering. It is said that 50 per cent. of the men working in the mines in California are infected with the disease.

Alumni Election.—At the annual meeting of the Alumni Association of the College of Physicians and Surgeons of San Francisco, May 31, the following officers were elected: president, Dr. Frederick C. Keck; vice presidents, Drs. Will P. Schwarz and Gabriel J. Vischi; secretary, Dr. Charles M. Troppmann, and treasurer, Dr. Philip S. Haley.

ILLINOIS

Medical Aid for University Students.—Northwestern University will provide daily consultation and free treatment for its students. Dr. Virgil E. Dudman has been appointed health officer.

Banquet for New State President.—Dr. Elmer B. Cooley, Danville, president-elect of the Illinois State Medical Society, was the guest of honor at a banquet given by the Vermilion County Medical Society at the Plaza Hotel, Danville, June 19.

Picnic and Medical Meeting.—Physicians of the state are invited to attend the three-day picnic of the Illinois State Medical Society at Starved Rock, Ill., July 12 to 14, as guests of the doctors of northern Illinois. The committee in charge has provided excellent entertainment, including an address by Dr. William Seaman Bainbridge, New York; outdoor sports, hikes, river excursions and a visit to the Ottawa Tuberculosis colony.

Chicago

Women Doctors Elect.—At the annual meeting of the Medical Women's Club of Chicago, June 21, Dr. Clara Ferguson was elected president; Drs. Lillian E. Taylor and Marie S. Schmidt, vice presidents; Dr. Rachel A. Watkins, secretary; Dr. Ione F. Beem, treasurer, and Dr. Sadie Bay Adair, editor of the bulletin.

Baby Week.—Baby Week, conducted under the auspices of the health department, ended June 23, and during the week more than 300 addresses were delivered to children in public schools and many talks were made from automobiles to street corner crowds. The 200 physicians and 100 nurses who took part in this work traversed the entire city preaching the gospel of the proper care of babies and distributing the health department's book on this subject.

Annual Meeting of Chicago Medical Society.—At the annual election of the Chicago Medical Society, June 20, the following officers were elected: president-elect, Dr. Charles E. Humiston; president, Dr. A. Augustus O'Neill, and secretary, Dr. John V. Fowler. On the following evening these officers were installed at a reception given in the Auditorium Hotel, at which Dr. Elmer B. Cooley, Danville, the president-elect of the Illinois State Medical Society, was the guest of honor. The reception was followed by a banquet and dance.

Memorial to Distinguished Sanitarian.—A memorial service to the late Dr. Frank W. Reilly, for many years assistant commissioner of health of Chicago, and at one time secretary of the Illinois State Board of Health, was held June 21, when the Frank W. Reilly Public School at School Street and Lawndale Avenue was dedicated. The principal addresses were delivered by Superintendent of Schools John D. Shoop; President Jacob M. Loeb of the Board of Education; Dr. Arthur R. Reynolds, former health commissioner, and Dr. Alfred C. Cotton, who paid high tribute to the memory of Dr. Reilly.

Banquet to Prof. Walter S. Haines.—The annual banquet of the faculty and alumni of Rush Medical College, held Saturday, June 17, was a testimonial to Prof. Walter S. Haines in recognition of forty years of service as teacher of materia medica and chemistry at the college. A portrait of Dr. Haines, paid for by individual subscription from 1,100 alumni, was presented to the college by Dr. William T. Belfield and accepted by Dr. Frank Billings. A short address was made by Professor Haines. More than 400 alumni were present. At the annual meeting of the alumni association the following officers were elected: president, Dr. John E. Rhodes; treasurer, Dr. Elmer L. Kenyon, and secretary, Dr. Charles A. Parker.

Personal.—At the annual convocation of the University of Wisconsin, June 21, the degree of Doctor of Science was conferred on Dr. Ludvig Hektoen.——Dr. Frederick Tice is convalescing at the Washington Boulevard Hospital after an operation for gallstones.——Dr. Philip S. Chancellor has returned from Santa Barbara to join Field Hospital No. 1, Illinois National Guard, in Springfield. Dr. Chancellor recently returned from service with the Chicago unit in France where he was mentioned in dispatches on account of efficient service.——Capt. Daniel W. Rogers has been appointed major; Lieut. Eugene G. Clancy has been promoted to captain, and Dr. Thomas M. Egan has been appointed first lieutenant, medical corps, all being assigned to the Seventh Infantry.——Drs. John G. O'Malley and Frederick C. Jacobs have returned after service in a British base hospital in France.——Drs. Jacob J. Minke, Harry C. Rolnick, and six nurses have arrived in Berlin to take service in German base hospitals.

INDIANA

Personal.—Dr. Moses A. Rush, Anderson, who has been seriously ill for several weeks as the result of a cerebral hemorrhage, is reported to be improving.——Dr. Brown S. McClintic, Peru, is on duty with the Russian army in Persia.

National Guard Changes.—Maj. Frank W. Foxworthy, Medical Corps, Indianapolis, has been appointed chief surgeon of the Indiana National Guard; Maj. Larue D. Carter has been assigned to command Field Hospital No. 1, and Drs. Burton A. Thompson, Kokomo; Leonard J. Ostrowski, Indiana Harbor; Clint C. Sourwine, Brazil, and Leonard P. Collins, Winamac, after a physical, mental and professional examination, have been appointed lieutenants in the medical corps.

MARYLAND

Personal.—Dr. Elizabeth Hurdon, Baltimore, sailed June 28 from New York for England for an indefinite stay.——Prof. William H. Welch received the degree of Doctor of Laws at the spring convocation of the University of Chicago. ——Dr. Edward L. Whitney, professor of physiologic chemistry, pharmacology and clinical pathology in the University of Maryland, has resigned to take up practice in Portland, Ore.

Johns Hopkins Hospital Given $93,000.—For the purpose of enlarging the Phipps Tuberculosis Dispensary and adding facilities for diagnosis and treatment, $7,500, and $17,500 as an annuity for five years for supporting a research fund have been given the Johns Hopkins Hospital by Mr. Kenneth Dows of New York. Dr. Allen K. Krause, at present connected with the Saranac Lake (N. Y.) laboratories, will come to Baltimore and with a special staff will assume charge of the work in the Phipps laboratories. The donor's aim is to create facilities for more adequate and thorough research work. It is also planned to afford better instruction for physicians specializing in the treatment of tuberculosis along the lines of recognition and management of the disease. The work of the newly organized department will be centralized in the laboratory. In the clinic, Dr. Krause's staff will consist of Dr. C. R. Austrian, now in charge of the dispensary, Drs. Edward V. Coolahan, Isadore Hirschman, Mary A. Hodge, Martin F. Sloan, John Girdwood and Hiram Fried. During the summer months, Dr. Krause will return to his work at Saranac Lake, thus binding together the Trudeau School of Tuberculosis and the Johns Hopkins Hospital.

NEW JERSEY

Personal.—At the fifty-fifth annual commencement exercises of Washington University, St. Louis, June 8, the honorary degree of LL.D. was conferred on Dr. Theobald Smith, Princeton, N. J., who is connected with the Rockefeller Institute for Medical Research.

Society One Hundred and Fifty Years Old.—The one hundred and fiftieth annual meeting of the Medical Society of New Jersey was held at Asbury Park, June 19 to 22, under the presidency of Dr. William J. Chandler, South Orange. The following officers were elected: president, Dr. Philip Marvel, Atlantic City; vice presidents, Drs. William G. Schauffler, Lakewood; Thomas W. Harvey, Orange, and Gordon K. Dickinson, Jersey City; secretary, Dr. Thomas N. Gray, East Orange (reelected), and treasurer, Dr. Archibald Mercer, Newark (reelected). The oration in medicine was delivered by Dr. Martin H. Fischer of the University of Cincinnati on "Classification, Prognosis and Treatment in the Nephritides." At the anniversary dinner, held June 21, at the Monterey Hotel, the speakers were Dr. Hobart A. Hare of the University of Pennsylvania, Philadelphia, and former Attorney General Robert H. McCarter, Newark. The morning session of the last day was devoted to centennial exercises for Essex, Middlesex, Monmouth, Morris and Somerset county medical societies. The society has always held the get-together spirit in its annual meetings as most important and special interest has been manifested in the work of the house of delegates. At the last meeting, the committee on standardization of hospitals, which was appointed in 1914, made its report. This committee had made a personal investigation of every hospital in the state during 1914-1915, and during the last year has studied the data obtained during these investigations and formulated a minimum standard for hospitals. The report was unanimously adopted by the house of delegates, and the State Board of Medical Examiners, at that time in session in Trenton, was advised of this action. Later it was announced to the house of delegates that the state board had adopted the society's findings as to minimum standards for hospitals. This society is unique among medical societies in the large number of members who bring their wives and families to the meetings. Among the visitors from outside the state were Drs. George I. McKelway of Delaware; C. B. Earle of South Carolina; Martin B. Tinker of New York; John R. Brown of Washington; Edward Y. Davidson of the District of Columbia, and George M. Palmer of Massachusetts. The Medical Society of the State of Pennsylvania paid a splendid tribute to the society by sending a delegation of about fifty, representing in addition the medical institutions of the state and the board of health of Philadelphia. Nearly 800 were in attendance; of this about one half represented membership. In the seventy-seven years from 1835 to 1912, the society has had but three recording secretaries, two of whom, the Drs. William Pierson, father and son, served thirty-one years each, and Dr. William J. Chandler fifteen years. Dr. James English served as treasurer for thirty-three years and this year the society recognized the twenty-five years of service as treasurer of Dr. Archibald Mercer by presenting him with a massive silver loving cup at the annual banquet. The original book of minutes of this society, in good preservation, is still in its possession. In the century and a half since its organization, the membership has increased from sixteen who responded to the roll call on the day of its organization, to over 1,600 physicians, whose names now appear on its roster. In anticipation of the one hundred and fiftieth anniversary the June issue of the *Journal of the Medical Society of the State of New Jersey* was a special issue devoted largely to recording the history of the physicians who have taken a prominent part in the profession of the state, and in announcing the program for the annual session.

NEW YORK

Visit Memorial Hospital.—Forty of the employees of the Bureau of Hygiene of the Buffalo Department of Health, headed by Dr. Arthur C. Schaefer, assistant commissioner of health, went to Perrysburg, June 10, to study methods in the J. N. Adam Memorial Hospital.——A second party headed by Arthur W. Kreinheder visited the hospital earlier in the day to make investigations with a view to increasing the facilities at the institution.

Immunizing New York Guardsmen Against Typhoid.—According to Commissioner Biggs of the state department of health enough vaccine was shipped from the laboratories of the department on June 22 to immunize 4,000 guardsmen. Enough vaccine is on hand to immunize the entire national guard recruited up to war strength. Anticipating such a demand, the division of laboratories of the department has been working overtime for several months.

New York City

College Requirements Raised.—Beginning with September, 1918, the University and Bellevue Hospital Medical College will require two years of college work before admission. By arrangement with the academic department of New York University, it will now be possible for a student after six years and a half to obtain the combined degree of bachelor of science and doctor of medicine.——Dr. Samuel A. Brown, assistant professor of medicine, has been made dean of the medical school.

Memorial Gift to Mount Sinai Hospital.—It has been announced that the Guggenheim brothers have given $165,000 to Mount Sinai Hospital as a supplement to previous gifts totaling $500,000 donated as a memorial to their parents. The gift was originally intended to build a private pavilion with a capacity of eighty beds. The recent demands for private rooms has been so great that it has been shown that the contemplated building would have been far from adequate. The additional donation will provide for the erection of a pavilion having accommodations for 125 patients. The new building will be seven stories in height, and will have a frontage of 200 feet on Fifth Avenue overlooking Central Park.

Hospital Liability Ceases with Death.—Recently a certain Mrs. Hasselbach sued Mount Sinai Hospital for damages because of a necropsy performed on the body of her husband, but she did not allege that those performing the necropsy were under control of the hospital authorities. In reversing an order of the Supreme Court sustaining a demurrer to the separate defense of the defendant in this suit, the Appellate Division unanimously decided that a benevolent or charitable corporation maintaining a hospital wherein a patient dies after an operation, is not under absolute duty to the wife of such a patient to protect her husband's body against a necropsy by any person whomsoever and to deliver said body in the same condition that it was immediately after death.

Infantile Paralysis.—The officials in charge of the investigation of the infantile paralysis outbreak in Brooklyn announce that four additional true cases and ten new suspected cases have been found and they therefore believe that the outbreak is not spreading and that conditions will soon return to normal. Thus far 114 cases have been reported, with three deaths. The acting health commissioner, Dr. John S. Billings, Jr., has sent 2,500 circular letters to the physicians of Brooklyn calling attention to this outbreak and asking the cooperation of all practicing physicians in preventing the spread of the present focus of infection, and to the fact that in doubtful cases examination of the cerebrospinal fluid often affords valuable aid. The department is ready to undertake the examination of the spinal fluids and to make the lumbar puncture if requested. In 1907, this city suffered an extensive outbreak of poliomyelitis, there being over 2,500 cases, and little was known with reference to the control of the disease. The department of health now requires a minimum period of quarantine of six weeks, and also insists in the exclusion from school of other children in the same family. Since there is good reason to believe that the disease is spread through infected nasal discharges, the department insists on precautions similar to those in diphtheria.

OHIO

Honor Dr. Means.—The faculty of the Ohio Medical University held a banquet in Columbus, June 19, in honor of Dr. William J. Means, dean of the faculty, who resigned recently after a quarter of a century of active service for the institution.

Honor to Zinke.—Dr. E. Gustav Zinke, Cincinnati, was the guest of honor at a dinner given by 125 physicians and friends at the Hotel Gibson, Cincinnati, June 19, on the occasion of his retirement after twenty years' service as professor of obstetrics at the Medical College of Ohio. Dr. Charles L. Bonifield was toastmaster, and Dr. Zinke was presented with a silver loving cup.

Personal.—It is reported that Dr. William Gillespie is to succeed Dr. E. Gustav Zinke as professor of obstetrics at the Ohio-Miami Medical College.——Dr. Booker Lee has resigned from the staff of the Massillon State Hospital and will practice in Richmond, Va.——Dr. Thomas J. Calkins, Cleveland, was given the honorary degree of Master of Arts by Fordham College, New York, June 15.——Dr. Harry R. Wahl, associate in pathology in Western Reserve University, Cleveland, has been elected director of laboratories in the new Mt. Sinai Hospital.

Degree to Prof. John Uri Lloyd.—At the annual commencement of the University of Cincinnati, June 10, the honorary degree of Doctor of Science was conferred on Prof. John Uri Lloyd, Cincinnati, author, chemist, humanitarian and philanthropist. Professor Lloyd is also widely known as a literary student of the folklore of northern Kentucky. He is the founder of the Lloyd Library, the most completely equipped pharmaceutical library in this country. His contributions to the chemistry of colloids and his researches in the chemistry of medicinal plants are many and valuable.

Alumni Meeting.—The meeting of the Alumni Association of Western Reserve University, Medical Department, was held, June 8 to 10, at Cleveland with about 400 in attendance. A series of clinics and demonstrations for three days was held in the various hospitals and the medical school. Dr. John B. Deaver, Philadelphia, delivered the annual address and held a general clinic at the City Hospital, and the following officers were elected: president, Dr. George E. Follansbee, Cleveland; vice presidents, Drs. Charles Griefe and John M. Firmin, Findlay; secretary, Dr. Clyde L. Cummer, Cleveland; and treasurer, Dr. Harvey A. Berkes, Cleveland. President Charles F. Thwing accepted, on behalf of the university, portraits of Dr. Gustave C. E. Weber, former professor of surgery, and Dr. Hunter H. Powell, former professor of obstetrics and diseases of women in the Medical College, the presentation on behalf of the Alumni Association being made by Drs. William T. Corlett and Arthur H. Ball respectively.

Faculty Changes.—The following changes are announced in the faculty of the Western Reserve University, Medical School: Dr. Edward Perkins Carter promoted to associate professor of medicine; Dr. Louis Williams Ladd promoted to associate professor of clinical necroscopy in the Leonard Hanna Foundation; Dr. William Bricker Chamberlin promoted to associate professor of otology, rhinology and laryngology; Dr. Harold Newton Cole promoted to associate professor of dermatology; Dr. Gaius Elijah Harmon promoted to senior instructor in hygiene; Dr. Bradley Merrill Patten promoted to senior instructor in histology and embryology; Dr. Percy Wells Cobb promoted to instructor in physiology; Dr. Edward Patrick Monaghan promoted to instructor in gynecology; Dr. Roy Bartlett Metz promoted to instructor in ophthalmology; Dr. Leo Wolfenstein promoted to instructor in ophthalmology. Dr. John George Spenzer was voted a seat and vote in the medical faculty as representative of the former faculty of the medical department of Ohio-Wesleyan University, and Dr. Arthur Bradley Eisenbrey, New York, was appointed associate in pathology.

OKLAHOMA

Personal.—Dr. John Reynolds, Muskogee, has been appointed city health officer; and Dr. James G. Rafter, Muskogee, has been made physician of Muskogee County.——Dr. John W. Duke, state commissioner of health, Guthrie, has been requested by the surgeon-general, U. S. P. H. S., to taken up the investigation of the number of cases of pemphigus in the United States.

State Association Meeting.—At the twenty-fourth annual meeting of the Oklahoma State Medical Association, held at Oklahoma City, Medicine Park was selected as the place of meeting for 1917, and the following officers were elected: president, Dr. Charles R. Hume, Anadarko; president elect, Dr. W. Albert Cook, Tulsa, and vice presidents, Drs. G. Fowler Border, Mangum; Arthur R. Lewis, Ryan, and Horace Reed, Oklahoma City.

OREGON

Alumni Election.—At the forty-first annual meeting of the Alumni Association of the Medical Department of the University of Oregon, held in Portland, June 7, the following officers were elected: president, Dr. David H. Rand, Portland; vice presidents, Drs. Banner R. Brooke, Portland; Louis Buck, Portland; Kittie Plummer Gray, Portland, and Mark W. McKinney, Seattle, Wash.; secretary, Dr. Adalbert G. Bettman, Portland, and treasurer, Dr. Katherine C. Manion, Portland. The name of the association was changed to

the Alumni Association of the Medical School of the University of Oregon, to conform to the change in the name of the institution.

PENNSYLVANIA

Druggists Fight "Patent Medicine" Vendors.—The Pennsylvania druggists, at their annual meeting in Reading during the week of June 20, enacted resolutions with a view of prohibiting or curtailing the sale of "patent medicines" in this state. At the last meeting of the legislature the bill was introduced to control this business and was defeated by a small majority. The druggists believe therefore that they can pass such a measure this year because the public better understands the evil of "patent medicine" frauds.

Personal.—Dr. and Mrs. Frank P. Lenahan, Wilkes Barre, have moved to San Diego, Calif.——Dr. Richard G. Burns is in charge of the Pittsburgh Tuberculosis Hospital.——Dr. J. Stuart Lawrance, Greensburg, has been appointed obstetrician to St. Mary's Hospital, Philadelphia.——Dr. Theodore L. Hazlett, Pittsburgh, who has been serving with the Russian army for a year and a half, is reported ill with typhus fever.——Dr. William J. Crookston, Pittsburgh, is home from Budapest, where he has been connected with the American Red Cross Hospital since December, 1914.

Philadelphia

Personal.—Dr. Charles K. Mills was given the honorary degree of Doctor of Laws by the University of Pennsylvania at the annual commencement exercises, June 20.——Dr. S. Lewis Ziegler was elected a member of the board of trustees of Bucknell University at the annual meeting, June 20.——Dr. John Wanamaker, III, has been appointed surgeon at the central station.

Phipps Institute to Close Branches.—The hospital of the Henry Phipps Institute for the study, treatment and prevention of tuberculosis is to be partially closed. "The factory experiment," an extensive branch of sociologic work providing an industrial occupation for tuberculous patients, will be closed at the end of the fiscal year, June 30. It is said the hospital itself will only be closed for a very short period. The sociologic department, however, with the dispensary and the pathologic laboratory, will continue in operation.

CANADA

Compulsory Military Training at McGill.—McGill University, Montreal, recently adopted the following resolution: "That in view of the gravity of the present situation, military training shall be compulsory (for the duration of the war and while the university is without a gymnasium) during the first three years of his course for every British male student of the university who is declared fit by the medical officer."

Personal.—Dr. Casimir C. Fissette, Brantford, Ont., has received an appointment to the R. A. M. C., and leaves shortly to take up his duties in a base hospital.——Dr. J. A. Boyd, Guelph, Ont., has been appointed medical superintendent of the Kingston General Hospital, in succession to Dr. Morris F. Coglon, who retires July 1.——Dr. John Hicks, assistant superintendent of the Brandon (Manitoba) Hospital for Mental Diseases, has been appointed superintendent to succeed Dr. John J. McFadden.

Hospital News.—A by-law is to be submitted to the people of Brantford, Ont., to provide $58,000 to pay off the debt on the new hospital building. The City Council has voted $7,000 for this purpose.——A hospital for the treatment of soldiers who have been "gassed" is to be built near the Mountain Sanatorium at Hamilton, Ont. The building will be provided by the Hamilton Health Association, and the Daughters of the Empire will be responsible for the maintenance of it. ——More than $41,000 was recently collected in Toronto for the new Women's Hospital. It is expected $120,000 will be raised.——A Home for Incurables is to be opened at Longue Pointe, Quebec.——From the Montreal theater tax the Montreal General Hospital, Royal Victoria, Hotel Dieu, Western and Notre Dame will receive about $30,000; the special hospitals will receive $20,000 and other institutions $10,000.—— There has recently been collected in Montreal a sum of $60,000 to pay off the debt of the Western Hospital in that city.——A nurses' home is to be built in connection with the Calgary Hospital.——The Calgary Hospitals Board will provide additional accommodation for cases of infectious diseases; this is owing to the prevalence of diphtheria in Calgary during the past few weeks.

GENERAL

Prevention of Hay Fever.—At the annual meeting of the American Hay-Fever-Prevention Association, held in New Orleans, June 15, the following physicians were elected to office: Dr. William Scheppegrell, New Orleans, president, and Surgeon General Rupert Blue, U. S. P. H. S., vice president.

Medical Alumni Organize.—At the annual meeting of the Medical Association of the Alumni of the University of Virginia, Charlottesville, the following officers were elected: president, Dr. Hugh H. Young, Baltimore; vice president, Dr. Fielding L. Taylor, New York, and secretary treasurer, Dr. Thomas V. Williamson, Norfolk, Va.

Academicians Elect New Officers.—At the annual meeting of the American Academy of Medicine, held in Detroit, June 12, the following officers were elected: president elect, Dr. Jacob E. Tuckerman, Cleveland; vice presidents, Drs. Frederick L. Van Sickle, Olyphant, Pa., and Ray Connor, Detroit, and secretary, Dr. Thomas W. Grayson, Pittsburgh.

Industrial Physicians Organize.—More than one hundred physicians engaged in work for great corporations met at Detroit, June 12, and organized the American Association of Industrial Physicians and Surgeons, electing the following officers: president, Surgeon Joseph W. Schereschewsky, U. S. P. H. S., Pittsburgh; vice presidents, Drs. Francis D. Patterson, Philadelphia, and Robert T. Legge, Berkeley, Calif., and secretary treasurer, Dr. Harry E. Mock, Chicago.

Result of Safety-First Campaign.—The safety revolution in business America has resulted, since 1913, in a reduction of accidents in the American Locomotive Company, Schenectady plant, of 62 per cent.; in the Eastman Kodak Camera Company of Rochester, N. Y., of 51 per cent.; Stromberg-Carlson Telephone Manufacturing Company, 40 per cent.; New York Edison Company, 38 per cent.; Lackawanna Steel Company, 44 per cent.; General Electric Company, 34 per cent., and the United States Steel Corporation, between 1906 and 1914, of 43.54 per cent.

Will Study Source of Tropical Diseases.—A commission constituted by the International Health Board of the Rockefeller Foundation sailed on the *Almirante*, June 14, on a trip to various points of South America where yellow fever is still reported to exist. The commission is headed by Maj. Gen. William C. Gorgas, U. S. Army, who has obtained four months' leave of absence for this purpose, and the other members are Asst. Surg. Gen. Henry R. Carter, U. S. P. H. S., clinician; Dr. Juan Guiteras, head of the Public Health Service of Cuba, clinician and general adviser; Maj. Theodore C. Lyster, M. C., U. S. Army, clinician; Maj. Eugene R. Whitmore, M. C., U. S. Army, pathologist; Sanitary Engineer William D. Wrightson, U. S. P. H. S., sanitary engineer, and Harry H. Wakefield, secretary. The commission will go first to Caracas, Venezuela, and then to Colon, and after crossing the Isthmus will proceed down the western coast of South America, stopping at Guayaquil, Ecuador; and Manaos, Pernambuco, and Bahia, Brazil. The official announcement states that this commission "will now make surveys of the infected regions for the purpose of determining the doubtful endemic centers and of ascertaining what measures may be necessary and feasible for the eradication of the infections in those communities on which the responsibility for the presence and spread of yellow fever is found to rest."

Another School of Hygiene and Public Health.—The Rockefeller Foundation reports that funds have been provided for the establishing of a school of hygiene and public health in Baltimore, in connection with Johns Hopkins University. Dr. William H. Welch has been appointed as director of the school and Dr. William H. Howell as head of the physiologic department. A site is to be purchased and a suitable building erected, provided with laboratories and departments needed in such a school, including those of sanitary chemistry, physiology, bacteriology, protozoology, epidemiology, industrial hygiene, vital statistics, museum, library, etc. A year will be required for the erection of the building, the securing of equipment and the gathering together of a suitable staff of teachers. It is expected, therefore, that the school will be opened in October, 1917. Johns Hopkins University will be the eleventh institution to establish a school of hygiene and public health. The others, given in order of their organization, are connected with the University of Pennsylvania, Harvard University, the Universities of Michigan, Wisconsin and Colorado, the Detroit College of Medicine and Surgery, University and Bellevue Hospital Medical College, Tulane University and

the Universities of Minnesota and California. All these schools have been established since 1909, and undoubtedly have been organized in recognition of the urgent need of improved opportunities for public health instruction. As a result the science of sanitation and public health will be more rapidly advanced, and methods of teaching will be improved. Still more important, however, they have provided the facilities and the instructors whereby medical students, physicians, engineers, chemists, biologists and others may fit themselves for useful careers in public health work. These graduates will go forth better prepared not only for their own particular work but also to instruct others how to live and how to keep well.

Bequests and Donations.—The following bequests and donations have recently been announced:

United Hebrew Charities, Mt. Sinai Hospital, Home for Aged and Infirm Hebrews, and Montefiore Home for Incurables, each $1,000, by the will of Mrs. Rachael Lahmeier.

St. Luke's Hospital, New York, $10,000; Columbia Hospital, $5,000; State Trustees' Aid Association, $3,000, by the will of Miss Alice T. Wheelock.

Municipal Hospital for Monroe, N. C., property valued at $20,000, by the will of Mrs. Ellen Fitzgerald, Monroe.

Brooklyn Hospital, Brooklyn City Dispensary and Brooklyn Home for Consumptives, each $5,000, by the will of Senator Stephen Griswold.

Columbia University, $100,000, to establish an endowment fund for research into the cause, prevention and cure of cancer, by the will of Emil C. Bondy.

Albany Medical College, for college administration, a donation of $40,000, by anonymous benefactors; $1,000, for the building fund of the institution, a donation from Simon W. Rosendale, president of the board of trustees.

Washington University Medical School, St. Louis, a donation of $166,000, from Edwin Mallinckrodt, and a donation of a similar amount from John W. Milliken, both of St. Louis.

A hospital for Steger, Ill., by the will of John V. Steger.

Minnesota State Tuberculosis Fund, $11,937.10, as the result of a tax on boxing bouts.

Presbyterian Hospital, Chicago, $12,000, the income of which is to be used for the maintenance of a room to be known as the Marion Louise Room; Chicago Visiting Nurses' Association, $10,000, and United Charities of Chicago, $5,000, by the will of Ella M. Walker.

Philadelphia General Hospital, a contingent bequest of $1,000 for the tuberculous poor, by the will of Horace Haverstick.

Johns Hopkins Hospital, $95,000, to be devoted to the investigation of tuberculosis and the better teaching of physicians and students in the recognition and management of the disease and the care of patients at the hospital, by the will of Kenneth Dows, New York.

Free Hospital for Women, Brookline, Mass., interest in the estate at 511 Washington Street and 16-24 West Street, Boston, for the purpose of erecting a cancer hospital. Waltham (Mass.) Baby Hospital, $5,000, and Industrial School for Crippled and Deformed Children and New England Hospital for Women and Children, Boston, the residue of the $70,000 trust fund after the payment of $19,000 legacies, by the will of Mrs. Anna Bolton Matthews, Boston.

Michigan Child Welfare League, between $4,000 and $5,000 on tag day, June 17.

Visiting Nurses' Fund of Sheboygan, Wis., $1,500, collections of tag day, June 17.

FOREIGN

Deaths in the Profession Abroad.—P. A. V. Rommelaere, professor emeritus of medicine at the University of Brussels, aged 79.——H. Favre of Paris, aged 88.——F. Dubief, member of the French house of deputies and at one time of the French cabinet, aged 66.——A. Faye of Christiania, the leading historian of medicine in Norway. Without being officially connected with the University of Christiania, he was several times called on to deliver courses on medical history. He succumbed to cancer of the stomach at an advanced age.——A. Riva, professor of clinical medicine at the University of Parma, a pioneer in various fields of pathology and clinical medicine, aged 72.

WAR NOTES

Assignments in Eastern Department.—The following assignments of army medical officers to take charge of the physical examination preliminary to mustering in the Organized Militia into the service of the United States are announced: Connecticut, Maj. Charles Y. Brownlee, M. C., at Niantic; Georgia, Maj. Henry Page, M. C., at Macon; Maine, Capt. George B. Foster, M. C., at Augusta; Massachusetts, Maj. James F. Hall, M. C., at South Framingham; New Hampshire, Lieut.-Col. Henry D. Snyder, M. C., Concord; New Jersey, Capt. Nelson Gapen, M. C., Sea Girt; New York, Maj. Sanford H. Wadhams, M. C., Green Haven; North Carolina, Maj. Edward F. Geddings, M. C., Camp Glen, Morehead City; Pennsylvania, Maj. Conrad P. Koerper, M. C., Mt. Gretna, and Virginia, Lieut.-Col. Alexander N. Stark, M. C., Richmond.

Red Cross Relief Work.—The American Red Cross in its instructions to chapters, dated June 22, indicates the duty of the American Red Cross to undertake two important lines of service in consequence of the calling out of the National Guard for the protection of the southwestern international boundary. The first line of service is that of supplies for soldiers in camps. The Red Cross will collect, forward and distribute suitable articles for the soldiers. Receiving and distributing depots will be established at San Antonio and El Paso in charge of competent persons, and supplies sent to these depots will be distributed in the camps in accordance with the rules prescribed by the military authorities. It is probable that intermediate depots will be established in a number of important centers. The second line of service is the care of destitute families of soldiers, regarding which an announcement will be made at an early date. Chapters are advised immediately to segregate their work into two sections: one on military relief and one on civilian relief. The chapters are urged to exercise a thoroughly cooperative and cordial spirit toward other organizations and agencies which desire to participate in this work. All such organizations should be invited to join hands with the Red Cross and thus give a demonstration of united, harmonious community effort. All questions of policy should be reported to the Director General of Civilian Relief, at Washington, D. C.

Sanitary Troops Ordered Out.—In addition to the sanitary detachments assigned to the various units of the Organized Militia, the following organizations have been ordered to mobilization: California, one ambulance company and one field hospital; Colorado, one field hospital; Connecticut, one ambulance company and one field hospital; District of Columbia, one field hospital; Georgia, one field hospital; Illinois, two field hospitals; Indiana, one field hospital and one ambulance company; Iowa, one field hospital and one ambulance company; Kentucky, one field hospital and one ambulance company; Maryland, one field hospital and one ambulance company; Massachusetts, one field hospital and one ambulance company; Michigan, one field hospital and two ambulance companies; Missouri, one field hospital and one ambulance company; Nebraska, one field hospital; New Jersey, one field hospital and one ambulance company; New York, three field hospitals and four ambulance companies; North Carolina, one field hospital and one ambulance company; Ohio, three field hospitals and two ambulance companies; Oklahoma, one field hospital; Pennsylvania, two field hospitals and two ambulance companies; Rhode Island, one ambulance company; Tennessee, one field hospital and one ambulance company; Virginia, one field hospital, and Wisconsin, one field hospital. The entire National Guard of Arizona and Texas was mustered into the United States service in May.

Call for Service.—To officers of the Medical Corps required for service in mobilization camps, the following telegram has been sent by the commander of the Central Department: "You as first lieutenant, Medical Reserve Corps, inactive list, are hereby called into active service. Proceed at once with or without uniform to mobilization camp at ———— and report to senior mustering officer there for temporary duty as medical examiner of organized militia. Wire acceptance immediately." In the Central Department the following medical officers have been recommended for duty and have reported:

Illinois—Lieuts. John A. Hornsby, Arthur R. Reynolds, James F. Presnell, Henry F. Lewis, Edward C. Morton, Clarence L. Wheaton and Francis Deacon, Chicago; Albert H. Roler, Evanston, and Jesse C. Maxon, Harvard, have reported to Maj. James W. Phalen, M. C., camp surgeon at Springfield. Ohio—Lieuts. George C. Schaeffer, C. E. Pfeifer, John B. Alcorn and Frank Winders, Columbus; Archibald M. Wilkins, Delta, and Rufus A. Van Voast, Cincinnati, have reported to Maj. Ernest L. Ruffner, M. C., U. S. Army, camp surgeon at Columbus. Minnesota—Lieuts. Alexander R. Colvin, John M. Armstrong, St. Paul, and Alexander E. Hedback, Minneapolis, have reported to Maj. George H. Crabtree, M. C., camp surgeon at Fort Snelling. Michigan—Lieuts. Emil H. Webster (at present on active duty at Fort Brady, Mich.), Harry L. Arnold, Oswego, and Preston M. Hickey, Detroit, have reported to Maj. James L. Bevans, M. C., camp surgeon, at Grayling. Wisconsin—Lieuts. A. E. Midgley, Whitewater; Frederick C. Huff, Sturgeon Bay; George V. I. Brown, Milwaukee, and William G. Merrill, Grand Rapids, have reported to Lieut.-Col. James M. Kennedy, M. C., camp surgeon, at Camp Douglas. Indiana—Lieuts. Thomas Z. Ball, Waveland, and Thomas B. V. Keene, Carleton B. McCulloch, Horace R. Allen, John J. Boaz and Blanchard B. Pettijohn have reported for duty to Lieut.-Col. William B. Banister, M. C., camp surgeon, at Fort Benjamin Harrison, Indianapolis. Iowa—Lieuts. Eugene R. Lewis, Dubuque; James E. Kessell and Edward E. Dorr, Des Moines; Evan S. Evans, Grinnell and Frederick G. Murray, Cedar Rapids, have reported to Maj. Kent Nelson, M. C., camp surgeon at Des Moines. Missouri—Lieuts. Reinhard E. Wobus, Major G. Seelig, Downey L. Harris and Clarence Loeb, St. Louis, and Guy L. Noyes,

Columbia, have reported to Maj. M. A. W. Shockley, M. C., camp surgeon at Nevada. Kansas—Lieuts. John E. Hewitt (now on active duty at that post), Frederick W. O'Donnell, Junction City; George E. Tooley, Washington, and Samuel T. Millard, Topeka, have reported to Capt. George P. Peed, M. C., camp surgeon, at Fort Riley. Nebraska—Lieuts. Emile L. DeLanney, Omaha, and Albert A. Fricke, South Omaha, have reported to Capt. Charles F. Craig, M. C., camp surgeon, at Lincoln. Colorado—Lieuts. William L. Edmunson, William W. Grant and Walter A. Jayne, Denver, have reported for duty to Capt. Leonard S. Hughes, M. C., camp surgeon, at Golden. Wyoming—Lieut. Henry C. Bierbower (now on active duty at Fort D. A. Russell, Wyo.), has reported to Capt. Ray W. Bryan, M. C., camp surgeon, at Cheyenne. North Dakota—Lieuts. Frederick B. Strause and Albert M. Fischer have reported to Capt. Clarence H. Connor, M. C., camp surgeon, at Fort Lincoln. South Dakota—Lieut. William E. Clark, Aberdeen, has reported to Capt. Leartus J. Owen, M. C., camp surgeon, at Redfield.

Organization of Base Hospital Units.—Col. Jefferson R. Kean, Medical Corps, U. S. Army, as director general of Military Relief for the American Red Cross, assumes the organization of base hospital units from the personnel of the larger civil hospitals in this country. These base hospitals are intended to be transported on the outbreak of war to the seat of military operations, where they are located at the city which is selected to be the military base. One of these is needed for each 20,000 men brought into service. They receive the sick and wounded coming from the field hospitals at the front, and in them the wounded soldier in his journey to the rear first finds a comfortable bed and trained nurses. Thirteen base hospitals with skilled personnel are now organized and seven more are in process of organization. Each base hospital is equipped to receive 500 patients. Although organized by the Red Cross, they are not administered by it, but when called into active service pass under the exclusive authority of the War Department and become a part of its medical service. The medical officers are given military commissions in the Reserve Corps, and receive volunteer commissions when called into active service. The nurses in the same way belong to the Red Cross Nursing Service, and in time of war become a part of the Army Nurse Corps. The following are the locations of these hospitals and the heads of the various services:

PRESBYTERIAN HOSPITAL, New York.—Director and chief of surgical service, Dr. George E. Brewer; principal assistant, Dr. Alfred Stillman; chief of medical service, Dr. Warfield T. Longcope; chief of laboratory service, Dr. Karl M. Vogel; chief nurse, Miss Anna C. Maxwell.

MOUNT SINAI HOSPITAL, New York.—Director, Dr. N. E. Brill; chief of surgical service, Dr. Howard Lilienthal; chief of medical service, Dr. R. Weil; chief of laboratory service, Dr. George Baehr; chief nurse, Miss Elizabeth A. Greener.

BELLEVUE HOSPITAL, New York.—Director and chief of surgical service, Dr. George David Stewart; chief of medical service, Dr. Van Horne Norrie; chief of laboratory service, Dr. Charles Norris; chief nurse, Miss Clara D. Noyes.

NEW YORK HOSPITAL, New York.—Director and chief of surgical service, Dr. Charles L. Gibson; chief of medical service, Dr. Lewis A. Conner; chief of laboratory service, Dr. William J. Elser; chief nurse, Miss M. H. Jordan.

NEW YORK POST GRADUATE HOSPITAL, New York.—Director, Dr. Samuel Lloyd; chief of surgical service, Dr. Edward W. Peterson; chief of medical service, Dr. Arthur F. Chace; chief of laboratory service, Dr. Ward J. MacNeal; chief nurse, Miss Amy Patmore.

BROOKLYN, for Navy.—Director and chief of surgical service, Dr. W. B. Brinsmade; chief of medical service, Dr. Luther F. Warren; chief of laboratory service, Dr. Robert F. Barber; chief nurse, Miss Frances van Ingen.

MASSACHUSETTS GENERAL HOSPITAL, Boston.—Director, Dr. Frederic A. Washburn; chief of surgical service, Dr. George W. W. Brewster; chief of medical service, Dr. Richard C. Cabot; chief of laboratory service, Dr. J. Homer Wright; chief nurse, Miss Sara E. Parsons.

BOSTON CITY HOSPITAL, Boston.—Director, Dr. J. J. Dowling; chief of surgical service, Dr. Edward H. Nichols; chief of medical service, Dr. John Jeffries Thomas; chief of laboratory service, Dr. Arial W. George; chief nurse, Miss Emma M. Nichols.

HARVARD UNIVERSITY, Massachusetts.—Director and chief of surgical service, Dr. Harvey Cushing; chief of medical service, Dr. Roger Lee; chief of laboratory service, Dr. Richard P. Strong; chief nurse, Miss Carrie M. Hall.

LAKESIDE HOSPITAL, Cleveland.—Director, Dr. George W. Crile; chief of surgical service, Dr. W. E. Lower; chief of medical service, Dr. C. F. Hoover; chief of laboratory service, Dr. H. T. Karsner; chief nurse, Miss Grace Allison.

ROCHESTER, N. Y.—Director, John M. Swan; chief of surgical service, Dr. C. W. Hennington; chief of medical service, Dr. William V. Ewers; chief of laboratory service, Dr. C. C. Sutter; chief nurse, Miss Emma Jones; assistant, Miss Jessica Heal.

JOHNS HOPKINS HOSPITAL, Baltimore.—Director, Dr. Winford Smith; chief of surgical service, Dr. J. M. T. Finney; chief of medical service, Dr. T. C. Janeway; chief of laboratory service, Dr. T. R. Boggs; chief nurse, Miss Bessie E. Baker.

HARPER HOSPITAL, Detroit.—Director, Dr. Angus McLean; chief of surgical service, Dr. C. D. Brooks; chief of medical service, Dr. B. R. Shurly; chief of laboratory service, Dr. P. M. Hickey; chief nurse, Miss Emily McLaughlin.

PARIS LETTER

PARIS, June 1, 1916.

The War

SKULL WOUNDS

Many problems have arisen in regard to this subject both from the surgical and the neurologic point of view. For this reason, the Société de chirurgie de Paris and the Société de neurologie de Paris recently met in a common session under the chairmanship of the undersecretary of state for public health, in order to study a number of these questions. The following subjects were discussed:

1. Early operation in wounds of the skull: Should one always operate? What types of operation should be recognized? How far should one go? When in presence of a simple crack of the external table, what operation should be performed, and should one always diagnose fracture of the internal table and search for fragments? Is the flap preferable to the crucial incision? What are the indications, technic and the results of early extraction of projectiles which have penetrated the brain?

2. Transport of patients with skull wounds.

3. Early secondary complications of skull wounds, particularly hernia of the brain, abscesses, meningitis, general or partial epilepsy, their frequence, prognosis, and treatment. Deferred extraction of projectiles.

4. Late complications (affections of the motor apparatus, of speech and of sight, and subjective troubles). Liability of wounded with skull injuries to develop these complications after healing of their wounds. For what period does this liability extend? How should the military value of such men be judged?

5. Cranioplasty: indications; technic; complications, immediate and remote. Should the indemnity accorded to a wounded man be reduced on the ground of his refusal to submit to this operation? Protective prosthesis for large gaps in skull.

6. Protective value of the morion or helmet.

NECESSITY TO REMOVE EVEN THE SMALLEST PROJECTILES WHICH HAVE PENETRATED THE BRAIN

At the Réunion médico-chirurgicale de la I-re Armée, Dr. Barnsby brought forward two cases which prove the danger of the smallest fragments. In the first case the patient was a soldier from whom was removed, on the third day after receipt of the wound, a fragment the size of a very small pea. This fragment was extracted from the frontal lobe in which there had already formed an abscess as large as a hazelnut. In the second case, a fragment of the size of a wheat grain was extracted from the left rolandic region. The rise of temperature and development of a right hemiplegia with aphasia had precipitated the intervention. In the course of the operation there was found a voluminous abscess, in the pus of which was the projectile. It seemed advisable, therefore, to remove these small projectiles just as systematically as the large ones. The best method seems to be a combination of the compass for depth and direction and control by screen observations with Roentgen rays, which permits the simple and rapid extraction with the minimum of injury.

THE USE OF TEMPORARY ARTIFICIAL LIMBS INSTEAD OF CRUTCHES

At the Société de chirurgie de Paris, Professor Depage has made an interesting communication on this subject. He avoids in almost every case the use of crutches after amputation. Their use modifies the statics of the body, keeps the stump fixed, and not infrequently causes paresis of the arm by compression of the brachial plexus. Crutches are a bad instrument for those who have undergone amputation, and one ought to substitute the temporary artificial limb. The latter can be made of a variety of materials. At the suggestion of his assistant, Martin, Dr. Depage has used plaster, reinforced by bands of metallic cloth. The artificial limb so formed has a great advantage in that it adapts itself to the stump and that it answers all the indications for a normal gait. It is inexpensive, easily made by a skilful nurse, and can be remade to meet the modifications undergone by the stump. As soon as the latter has reached its final state, the temporary limb is replaced by a permanent one. Depage has recently conceived the idea of employing shavings in the manufacture of artificial limbs. The experiments which he has made in collaboration with Martin have been satisfactory. This new sort of apparatus presents the following advantages: possibility of being molded exactly on the stump, employing the whole of its surface and its bony points for a

support; similarity in form of the artificial and natural limb; slight weight, great strength, cheapness and ease of manufacture.

LATENT MYOCARDITIS

At the Réunion médicale de la IV-e Armée, Dr. C. Lian drew attention to the fact that acute articular rheumatism is often followed by a latent myocarditis which shows itself by palpitation and breathlessness after effort with or without precordial oppression and pain, where there is no sign of endocarditis or pericarditis. Lian insists on the practical importance of these facts, the nonrecognition of which may lead to regrettable errors. In fact, in a case of this kind, combining an extracardiac murmur and a history of rheumatism, a physician might easily make an erroneous diagnosis of endocarditis or pericarditis. From this, he would be led to recommend a soldier for the auxiliary services or for discharge, while these cases of myocarditis are, as a rule, compatible with active service. On the other hand, if the physician is able to set aside the possibility of endocarditis or pericarditis, he runs the danger of not recognizing the rheumatic origin of the trouble and of attributing it to purely nervous causes and, therefore, of not according to it the importance which it deserves. It is necessary, therefore, in cases of palpitation, to bear in mind the possibility and characters of this latent myocarditis. Although latent myocarditis is more common as a sequel of acute rheumatism, it may also result from any other infectious disease. The prognosis is, as a rule, quite good, and unless there supervenes another infectious disease, the exacerbation of the rheumatism or great physical or moral exhaustion, hyposystole or asystole is not to be feared. The treatment of the acute initial phase of myocarditis is that of the causal infectious disease; in the later stages, it must be palliative. From the military point of view, the patient can as a rule be maintained in active service. He may, if necessary, be changed from one arm to another or simply allotted to relatively sedentary work in his regiment or recommended not to be overworked. As a rule it is not necessary, on account of these cardiac troubles, to transfer the patient to the auxiliary services or to discharge him.

Prevention of Communicable Diseases in High Schools

At the Société de médecine de Paris, Dr. Gallois made a communication on the insufficiency of the measures taken in high schools to protect the pupils against communicable diseases. Epidemics have recently broken out and it is only after about ten cases of illness that serious measures have been taken. Gallois desires to see a complete reform of the present organization. In his opinion, the physician of the high schools should be responsible for the sanitary police of the establishment. When a day pupil has been absent more than five days, it should be the duty of the physician to go to the pupil's home to ascertain the nature of the illness in order that he may take the necessary measures. To the objection that in any case the pupil must produce a certificate before being admitted into the school, he answers that this certificate arrives much too late to admit of the necessary precautions being taken. Again, it has been said that this sanitary police function belongs to the epidemiologic service, but, in this respect, this service functions badly, nor could it be otherwise, since, in order to put it in movement, a declaration of the treating physician is necessary. The latter is not always made, and, when it is, it does not always mention that the patient is a pupil of the high school. The epidemiologic service is too complicated an organization. It is enough for one wheel to go wrong for the whole machine to stop. The prophylaxis of communicable diseases in school can only be satisfactorily assured by the concentration of all direct responsibility in the hands of one person, and by the elevation of school physician to the rank of defender of the health of the pupils.

Personal

At its sitting, May 23, the Académie de médecine proceeded to the election of a foreign corresponding member. Dr. Charles Willems, surgeon of Ghent, was almost unanimously elected.

At a recent session, the Académie des sciences held an election for a correspondent in the section of medicine and surgery in succession to the late Professor Mosso of Turin. Dr. Bergonié, professor of biologic physics and medical electricity at the Faculté de médecine de Bordeaux, was elected by sixteen to fourteen votes. Dr. Bergonié has acquired a great reputation by his remarkable work on electricity in its applications to medicine, and on radiography. He is the founder of the review under the name *Archives d'électricité médicale, expérimentale et clinique de Bordeaux.*

LONDON LETTER

LONDON, June 5, 1916.

The War

THE ARMY AND MEDICAL SERVICE

In his first dispatch, Sir Douglas Haig, the new commander-in-chief of the British forces in France, says that all branches of the medical services deserve the highest commendation for the successful work done by them, both at the front and on the lines of communication. The sick rate has been consistently low; there has been no serious epidemic, and typhoid fever, the bane of armies in the past, has almost completely disappeared, owing to preventive measures energetically carried out. The results of exposure incidental to trench warfare during the winter months were to a great extent kept in check by careful application of the precautions recommended and taught by regimental medical officers. The wounded have been promptly and efficiently dealt with, and their evacuation to the base has been rapidly accomplished. The close cooperation which has existed between the officers of the regular medical service of the army and those members of the civil medical profession who have patriotically given their valuable services to the army has largely contributed to the prevention of disease and to the successful treatment and comfort of the sick and wounded. As part of the medical services, the Canadian army medical corps has displayed marked efficiency and devotion to duty. The Commission of Graves Registration and Enquiries, since it first undertook the work eighteen months ago, has registered and marked over 50,000 graves. Without its labors many would have remained unidentified. It has answered several thousand inquiries from relatives and supplied them with photographs. Flowers and shrubs have been planted in most of the cemeteries which are sufficiently far removed from the firing line, and all cemeteries which it is possible to work in during the daytime are now being looked after by noncommissioned officers and men of this unit. The valuable nature of the work performed by the officers of the central laboratory and the chemical advisers with the armies, in investigations into the nature of the gases and other new substances used in hostile attacks, and in devising and perfecting means of protecting our troops against them, is deserving of recognition. The efforts of these officers materially contributed to the failure of the Germans in their attack of Dec. 19, 1915, as well as in the various gas attacks since then.

The Limitations of Science in Education

In this country the classics have always occupied the principal position in higher education, and though the greater recognition is being given to the claims of science, it still occupies a subordinate position. As shown in previous letters to THE JOURNAL, the protests of those who demand greater recognition for science have been increased by the war. A counterblast, signed by some university professors, including Sir William Osler and other public men, has been published in the *Times*. They point out that as material means and technical skill are the most obvious factors in deciding the war, there is a risk that these may be prized to the exclusion of forces even more important. Technical knowledge is essential to our industrial prosperity and national safety; but education should be nothing less than a preparation for the whole of life. It should introduce the future citizens of the community not merely to the physical structure of the world in which they live but also to the deeper interests and problems of politics, thought and human life. It should acquaint them, so far as may be, with the capacities and ideals of mankind, as expressed in literature and in art, with its ambitions and achievements as recorded in history, and with the nature and laws of the world as interpreted by science, philosophy and religion. If we neglect physical science, we shall have a very imperfect knowledge of the world around us; but if we ignore or subordinate the other elements of knowledge, we shall cut ourselves off from aspects of life of even greater importance. Even physical science will suffer. Some of its most distinguished representatives have strongly insisted that early specialization is injurious to the interests they have at heart, and that the best preparation for scientific pursuits is a general training which includes some study of language, literature and history. Such a training gives width of view and flexibility of intellect. Industry and commerce will be most successfully pursued by men whose education has stimulated their imagination and widened their sympathies. The nation requires mental training even more than physical science.

We might enthrone physical science in all our schools without acquiring as a nation what we most need, the persuasion that knowledge is essential to progress, and that it has to be acquired by the faculty of independent reflection, which implies the power of selecting, combining and testing the essential facts of the subject in hand. This scientific method is not the peculiar property of physical science; all good work in all studies is based on it; it is indispensable to law, history, classics, politics and all branches of knowledge rightly understood. What we want is scientific method in all branches of an education which will develop human faculty, and the power of thinking clearly to the highest possible degree. In this education, the study of Greece and Rome should have a large part, because our whole civilization is rooted in the history of these peoples, and without knowledge of them cannot be properly understood. The small city communities of Greece created the intellectual life of Europe. In their literature we find models of thought and expression, and the subtle and powerful personalities who originated for Europe all forms of poetry, history and philosophy, and even physical science itself, no less than the ideal of freedom and the conception of a self-governing democracy; while the student is introduced to the great problems of thought and life at their springs, before he follows them through the wider but more confused currents of the modern world. The educated citizens of a great empire should not remain ignorant of the first state that met the problem of uniting in a contented and prosperous commonwealth nations differing in race, temper and culture, and which has left so deep a mark on the language, law and political conceptions of Europe. Some knowledge of Latin is indispensable for the intelligent study of any one of these things and even for the intelligent use of our own language. Greece and Rome afford us unique instances, the one of creative and critical intelligence, the other of constructive statesmanship. Nor can we afford to neglect the noble precepts and shining examples of patriotism with which their history abounds.

Proposed School of Medicine at Johannesburg

It seems likely that another medical school will be added to those in the British Empire. A representative meeting of the medical profession of the Transvaal has been held at the South African Institute for Medical Research. Dr. Watkins-Pitchford, director of the institute, moved a resolution, which was unanimously adopted, that "the time has now arrived when in the interests of the community a school of medicine should be established in the Transvaal with facilities for granting diplomas." He said that Johannesburg had a European population larger than any other town in South Africa, and that it is essentially an industrial town. Its total population at the present time is 237,000, of which one half—119,000—are Europeans. For the purposes of higher education, the smaller towns of the Rand, from Randfontein in the west to Springs in the east, should be associated with the central town of Johannesburg, and these being included, the total population became 430,000, of which 206,000 are white people. In Johannesburg alone, there are more than twice, and on the whole of the Witwatersrand more than four times, as many people as there were in Leeds when its medical school was established. The number of hospital beds on the Witwatersrand is about 8,170, representing a wealth of material for clinical instruction which is unequaled throughout the world. There are some 520 physicians registered in the Transvaal, of whom 240 obtained their qualifications in Scotland, 172 in England, and 58 in Ireland; 43 hold diplomas obtained in various other countries, including 3 from Canada and 2 from Australia, and there are 5 physicians who have no qualifications other than the license of the late government of the South African Republic.

A Girl Burnt to Death on an Omnibus

From time to time the deaths of women due to their clothes catching fire are reported, but never apparently under such peculiar circumstances as the following: As a girl was traveling along the Strand on the top of a motor omnibus, the lower part of her dress caught fire. The material, which is described as voile, was so inflammable that she was immediately enveloped in flames. Two soldiers, who were on the bus, endeavored to extinguish the flames as soon as they could unbutton their tunics and throw them around her, and the conductor assisted with the omnibus aprons and a chemical extinguisher. But she was so severely burned that she died. The origin of the fire could not be ascertained, but it was probably caused by the carelessness of a smoker throwing down a lighted match.

Marriages

THADDEUS DEWEY SMITH, M.D., Neenah, Wis., to Miss Fredrica Doris Krueger of Kew Gardens, L. I., N. Y., April 29.

FREDERICK LOUIS WAHRER, M.D., Fort Madison, Iowa, to Miss Josephine Jane Gabelman of Marshalltown, Iowa, June 1.

WILLIAM SEBASTIAN DE LA HOYDE, M.D., to Miss Mary Newton, both of Brooklyn, at Williamsburg Hospital, June 7.

CHARLES ROLLIN GRANDY, M.D., Norfolk, Va., to Miss Elizabeth Norfleet Neely of Portsmouth, Va., June 10.

ASST. SURG. SUMMERFIELD M. TAYLOR, U. S. Navy, to Miss Florence Davis Riner, at Olongapo, P. I., April 14.

CHARLES STEWART SUTTON, M.D., to Miss Grace Hislop, both of St. Cloud, Minn., at Fargo, N. D., June 14.

JESSE DAY TAYLOR, M.D., University Place, Lincoln, Neb., to Miss Carita Schreckengast of Lincoln, June 14.

JOHN JOSEPH MCLOONE, M.D., Phoenix, Ariz., to Miss Hattie Vivian Watkins of Flagstaff, Ariz., June 7.

JOHN DUNCAN QUACKENBOS, M.D., New York, to Miss Louise Dudley White of Princeton, N. J., June 7.

LIONEL LOUIS ALBERT, M.D., Central Falls, R. I., to Miss Gertrude B. Steinmetz, at Yonkers, N. Y., May 21.

SIMON R. KARPELES, M.D., Washington, D. C., to KATE BRECKENRIDGE BOGLE, M.D., Danville, Ky., June 7.

MARGUERITE DEININGER, M.D., and Mr. Louis Keser, both of Richmond, Calif., at Alameda, Calif., June 9.

WILLIAM PARVIN BRAMLETT, M.D., Philadelphia, to Miss Rebecca Stroud Kerr of Towanda, Pa., June 15.

HARRY WELDAY MAYES, M.D., Brooklyn, to Miss Elizabeth Gertrude Lamb of St. Petersburg, Fla., June 3.

JOHN BRADFORD BRINSON, JR., M.D., to Miss Martha Hawkins Bailey, both of Monticello, Fla., April 25.

THEODORE ANDREW BAUMANN, M.D., DeLand, Ill., to Miss Mabel Ida Prentice of Rockford, Ill., June 2.

REGINALD JAMES HENRY STROUD, M.D., Gleeson, Ariz., to Miss Emma Luhrs of Phoenix, Ariz., June 7.

ISIDOR SAMUEL FAUST, M.D., Bronx, New York City, to Miss Edith Fern of Elizabeth, N. J., June 11.

ELBERT LAFAYETTE SPENCE, M.D., Fulton, Mo., to Miss Mittie V. Robnett of Columbia, Mo., June 10.

JOSEPH AUGUSTINE O'CONOR, M.D., to Miss Theodora Loretta Brown, both of New York, June 7.

CECIL GARDNER HARROD, M.D., to Mrs. Mollie Wasson, both of Burney, Ind., at Louisville, Ky., June 7.

HARRY WILLIAM HELMEN, M.D., South Bend, Ind., to Miss Norma Trayler of Indianapolis, June 7.

MILTON WESTON HALL, M.D., Evanston, Ill., to Miss Florence Patersen of Chicago, recently.

SAMUEL GOODMAN, M.D., Kansas City, Mo., to Miss Blanche Babette Wedeles of Chicago, June 17.

HEMAN R. BULL, M.D., Grand Junction, Colo., to Miss Ruth B. Fulwider of Denver, June 17.

OTIS HACKETT JOHNSON, M.D., New York, to Miss Mary Diana Stone of Ithaca, N. Y., June 17.

FRANK BENEDICT ROSINSKI, M.D., to Miss Theodora Sophia Kocinski, both of Cleveland, June 21.

CLARENCE WRIGLEY JUDD, M.D., Philadelphia, to Miss Virginia Vogt of Baltimore, June 7.

ERNEST NELSON GREENMAN, M.D., to Miss Portia C. Snow, both of Kankakee, Ill., June 15.

SERGEANT PRICE MARTIN, M.D., to Miss Alice Wilson, both of Rochester, Minn., June 17.

FRED WADE JONES, M.D., Alton, Ill., to Miss Mary Krome of Edwardsville, Ill., June 10.

ROBERT SHAW TAYLOR, M.D., Buffalo, to Miss Alma Ericson of Biggsville, Ill., June 8.

LEE WELSEY POLLOCK, M.D., to Miss Addie Baihly, both of Rochester, Minn., June 17.

JAY C. MILLER, M.D., Garrison, Neb., to Miss Edna Macrow of Lincoln, Neb., June 15.

ISIDORE GOLDSTEIN, M.D., to Miss Hazel Ritter, both of New York, June 4.

Deaths

Thomas Franklin Smith, M.D., New York City; New York Medical College, New York City, 1860; aged 83; visiting physician to the Metropolitan Hospital, New York City, and examiner in lunacy; treasurer of the American Institute of Homeopathy for twenty-three years; mustered with the Seventh Regiment, N. G. N. Y., of which he was major, into the United States service in 1861 as chaplain; and reenlisted as acting assistant surgeon, U. S. Army, serving in that capacity for fifteen months; for many years manager of the New York Association for Improving the Condition of the Poor, and vice president of the Jennie Clarkson Home for Children, Valhalla, N. Y.; died at his home, June 6.

Paul Paquin, M.D., Kansas City, Mo.; University of Missouri, Columbia, 1887; aged 55; a Fellow of the American Medical Association and a member of the Medical Society of North Carolina; for several years professor of bacteriology, pathology and comparative medicine in his alma mater; secretary of the Missouri State Board of Health from 1896 to 1899; afterward a resident of Asheville, N. C., for several years, director and executive officer of the Hospital and Health Board of Kansas City; died in the Christian Church Hospital, Kansas City, June 22, from tubercular meningitis.

William L. Tadlock, M.D., Talbott, Tenn.; Louisville, Ky., Medical College, 1898; aged 48; a member of the Tennessee State Medical Association; while returning from a Chautauqua at Morristown, Tenn., with his wife and nephew, in an automobile, was struck by a train of the Southern Railway at a grade crossing at Talbott; Dr. Tadlock and his nephew were instantly killed, and Mrs. Tadlock died from her injuries forty minutes later.

Oscar Paul Chester, M.D., Chicago, Northwestern University Medical School, 1896; aged 45; a Fellow of the American Medical Association; formerly attending physician to Mercy Hospital, Chicago, and instructor in physical diagnosis in his alma mater; who had been obliged to relinquish his practice two years ago on account of cerebral hemorrhage; died at the home of his mother in Champaign, Ill., June 24.

Samuel T. McDermith, M.D., Denver; University of Louisville, Ky., 1876; aged 67; formerly a Fellow of the American Medical Association and a member of the Colorado State Medical Society; formerly president of the medical section of the National Fraternal Congress, and for twelve years supreme medical examiner of the Fraternal Union of America; died suddenly in his office, June 15, from heart disease.

Henry Hughes, M.D., Long Branch, N. J.; College of Physicians and Surgeons in the City of New York, 1873; aged 67; a resident of Long Branch for more than forty years; for a number of years a member of the medical staff of the Monmouth Memorial Hospital; died in Miss Alton's House for Private Patients, New York City, June 14, from ascites.

Fenimore Cooper Hoke, M.D., Richfield Springs, N. Y.; College of Physicians and Surgeons in the City of New York, 1896; aged 45; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; for many years a practitioner of New York City; died at his home, June 16.

William Arthur Charlton, M.D., Palmyra, Neb.; Lincoln, Neb., Medical College, Eclectic, 1908; aged 32; professor of materia medica and therapeutics in his alma mater; a member of the Nebraska State Medical Association; was instantly killed by the overturning of his automobile about nine miles from Lincoln, June 5.

Clarence Webster Coulter, M.D., Oil City, Pa.; University of Pittsburgh, 1888; aged 59; formerly a member of the Medical Society of the State of Pennsylvania; a member of the National Association of Railway Surgeons; local surgeon of the Pennsylvania System to the Oil City Hospital; died at his home, June 10.

John Ellis Gilman, M.D., Chicago; Hahnemann Medical College, Chicago, 1871; aged 74; emeritus professor of materia medica and therapeutics in his alma mater; one of the oldest and most esteemed homeopathic practitioners of Chicago; died in St. Luke's Hospital, June 21, from cerebral hemorrhage.

Lawrence Thomas Aitkin, M.D., Brooklyn; Long Island College Hospital, 1908; aged 31; assistant to the Coney Island Hospital, the Medical Department of St. Peter's Hospital, the Long Island College Hospital and the Polhemus Clinic, Brooklyn; died at his home, June 18.

Robert William Hutcheson, M.R.C.S., England, 1857; M.D. University of St. Andrews, Dundee, Scotland, 1858; Licentiate of the Apothecaries' Society of London, 1859; aged 80; for fifty years a practitioner of Rockville Center, N. Y.; the dean of the medical profession of Long Island; died at his home, June 13.

Phineas J. Montgomery, M.D., Los Angeles; formerly of Council Bluffs, Ia.; Hahnemann Medical College, Chicago, 1880; aged 74; formerly consulting physician and surgeon to the Council Bluffs General Hospital and physician to Mercy Hospital; died at his home in Hollywood, Los Angeles, June 2.

Thomas Walter Long, M.D., Newton, N. C.; New York University, New York City, 1885; aged 56; a member of the Medical Society of the State of North Carolina; who fractured his hip in a fall while alighting from an automobile at Newton, June 9, died in a hospital in Hickory, N. C., June 11.

William Lane Duff, M.D., Harrisburg, Pa.; Philadelphia University of Medicine and Surgery, 1868; Medical College of Ohio, Cincinnati, 1874; aged 71; a member of the Medical Society of the State of Pennsylvania; for nearly forty years a practitioner of Harrisburg; died at his home, June 8, from uremia.

Samuel Murtland, M.D., New York City; College of Physicians and Surgeons in the City of New York, 1883; aged 66; formerly a member of the Medical Society of the State of New York; a fellow of the New York Academy of Medicine; died at his home, June 15.

Thomas Kirkpatrick, M.D., Garnett, Kan.; College of Physicians and Surgeons, Chicago, 1883; aged 58; a member of the Kansas Medical Society; secretary of the State Board of Health under Governor Morrill; died at his home, June 11, from heart disease.

Solomon Carrington Minor, M.D., New York City; New York University, New York City, 1892; aged 66; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; died at his home, June 16.

Levant Emery Hackley, M.D., Oak Park, Ill.; College of Physicians and Surgeons in the City of New York, 1850; aged 89; for many years a druggist of Minnesota, Chicago, and Wisconsin; died at his home, June 13, from senile debility.

David Saunders George, M.D., Marshallberg, N. C.; North Carolina Medical College, Charlotte, 1903; aged 51; a Fellow of the American Medical Association; died recently in a hospital in Morehead City, N. C.

John C. Knauer, M.D., Reading, Pa.; College of Physicians and Surgeons, Baltimore, 1886; aged 52; died in the Homeopathic Hospital, Reading, June 3, from septicemia due to an operation wound.

James J. Evans, M.D., Straud, Okla.; University of Louisville, Ky., 1894; aged 43; a member of the Oklahoma State Medical Association; died suddenly at his home, June 5, from heart disease.

William F. Beck, M.D., Buffalo, N. Y.; University of Buffalo, 1893; aged 59; for several years president of the Clinton Street Business Men's Association; died at his home, June 2.

J. T. Sparks, Camden, Tenn. (license, Tennessee, 1885); for more than thirty years a practitioner; died at his home six miles north of Camden, June 7, from cerebral hemorrhage.

Max Hermann, M.D., Detroit; Detroit College of Medicine and Surgery, 1910; aged 30; a Fellow of the American Medical Association; died at his home, June 3.

Thomas H. Coe, Byrdstown, Tenn. (license, Tennessee, 1889); aged 57; for thirty-four years a practitioner; died at his home about June 8, from tuberculosis.

Thacker Ellsworth Lee, M.D., Washington, D. C.; Howard University, Washington, D. C., 1892; aged 56; died at his home, June 8, from pernicious anemia.

Peter Hewetson, Amanda, Ohio (license, Ohio, years of practice, 1896); aged 85; for sixty years a practitioner of Amanda; died at his home, June 3.

Harlow Erwin Dunton, M.D., Brooklyn; University of Vermont, Burlington, 1877; aged 55; died at his home, June 6, from cerebral hemorrhage.

Alfred Paul Keam, M.D., St. Paul; Detroit Medical College, 1880; aged 63; died at his home, June 2, from angina pectoris.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

WINE OF CARDUI SUIT

Instructions to the Jury

BY THE HONORABLE JUDGE GEORGE A. CARPENTER

The following are the instructions of Judge Carpenter as given to the jury in the Wine of Cardui suit, Friday morning, June 16. Because of their importance, the instructions are printed out of their order.

Gentlemen of the Jury:—

For nearly three months you have been engaged in this trial. That your labor might have been shortened is not important. It means much to the litigants, and your patience has been appreciated both by the Court and counsel. Your service is compensated for, not alone by your fee bill but by your being able to be a substantial part of our greatest institution. To be able to determine what is right between man and man is an opportunity which is not given to all and, to fulfil well the duty imposed upon you in this case is a privilege which I foretell some day you will be proud of.

Counsel engaged on both sides are earnest and capable men charged with a serious responsibility to their clients and they have discharged their obligation to the full. It is not strange that from time to time during the course of the trial, they have indulged themselves in a little acidity of comment towards each other and to have now and then argued so vehemently that the Court could not be heard. Nothing that counsel have done or said, however, has passed the bounds of propriety, but I am bound to tell you that the evidence in the case you must take from the sworn witnesses and the exhibits which have been admitted for your consideration, and from no other source.

Statement Made by the Court

"It has been represented to the Court that rumors have been spread, by whom it is at this time unimportant, to the effect that various doctors who have testified in this case, volunteered in open court the names of their patients. Such rumors are false. All of the doctors, save one from Chicago, who had permission from his patient to disclose her name, requested the Court to allow them to withhold the names of their patients. This request was granted upon condition that the names be given to opposing counsel. As a result, none of the names were mentioned in open court or given to the public, but were given privately to opposing counsel for verification and investigation. The foregoing statement may be made a part of the record in this case."

[For explanation of the above see Editorial Comment, page 41]

It may be well at this point to impress upon you certain fundamental principles of law applying to all civil cases and to this case in particular. You must realize, and I so instruct you, that yours alone is the right, power and duty to determine from the evidence what the real facts are. Mine is the duty to advise you as to the law to be applied to those facts. I wish you to understand this clearly and no matter what I may say in these instructions about the facts or the witnesses, no word of mine is or should be permitted to influence you one way or the other so far as the determination of any material fact is concerned. If, perchance, I make any reference to the evidence, remember, please, it is for the sole purpose of enabling you to exercise your best judgment in settling the issues of fact involved. It is my duty to declare to you the law and it is your duty to apply the law so declared. You must determine what the facts are, uninfluenced by any views which you may think the Court has.

The Court has not given or intended to give or even intimate at any time during this trial, nor in these instructions, any views as to what are the facts or as to what inferences, if any, may be or should be drawn from the facts.

You are charged, therefore, to disregard any notions you may entertain as to what the Court's views may be on the evidence or its sufficiency. Yours is the responsibility with reference to the facts; mine as to the law.

On the other hand, whatever may be your personal impressions gained as laymen in regard to the law of this case also must be disregarded by you and you must be actuated entirely by what the Court tells you in these instructions is the law of the case.

The Court instructs the jury that no evidence has been offered in this case to sustain the replication to the plea of release to the first count of the declaration, and that the plea of release to that count must prevail. Therefore you cannot consider the first count of the declaration in making up your verdict and you are to decide the case upon the second count and upon the second alone.

You may, however, consider all the evidence presented by either side in arriving at your verdict upon the second count.

This is a case for damages based upon alleged libelous matter. Libel is a malicious defamation expressed in writing or by signs or pictures or by epitaphs tending to impeach the honesty, integrity, virtue or reputation of a person and to thereby expose him to public hatred, contempt, ridicule or obliquy and cause him to be shunned or avoided or to injure him in business or reputation.

One's good name is the only thing we know of in this material world which, if lost, cannot be compensated for by money. Remember in this connection that the fair name of a business or partnership in a commercial community is quite as valuable an asset as the fair name of an individual, in the community in which he lives.

No man is entitled lightly or recklessly or maliciously to defame either an individual or a commercial enterprise. The law recognizes the value to an individual of a business reputation and strives to give redress for its injury. It imposes upon him who attacks it by a libelous publication, a liability to make measurably full compensation for the damage to the reputation and for the shame and obloquy which are caused by the publication of the libel.

The Court instructs you that the following paragraphs which are in the article published by the defendants in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of July 18, 1914, are libelous per se, and I will explain later what "libelous per se" means. I quote from the second count of the declaration:

"Such then in brief, was the Journal's original article on Wine "of Cardui. In it two things were emphasized: one, the more "important, the fact that Wine of Cardui is a vicious fraud; the "other, that the preparation contains 20% alcohol, and so far as "the Association's chemists could discover, no other drugs in "amounts sufficient to give any medicinal effect. In fact, it seems "that the Journal's statement to the effect that Wine of Cardui "contains twice as much alcohol as is found in champagne has "elicited more comment than the charge that the stuff is an out-"rageous fraud on the women of the country."

And again from the same count, and the same article:

"The second reason for the publication of 'an explanation,' was "that the matter might be put up squarely to the membership of "the Methodist Episcopal Church, which has not only highly hon-"ored Mr. Patten, but has also accepted from Mr. Patten money "derived from the sale of a vicious and fraudulent patent medicine."

And again:

"As it has been said before, however, the alcohol content of "Wine of Cardui is but a minor indictment against the product; "the basic objection to it is that the business has been built on "deceit; that its sale is a wicked and vicious fraud perpetrated "on ailing women."

And again:

"To summarize: 1. Wine of Cardui is a vicious fraud. 2. Each "dose contains as much alcohol as is found in about 100 drops of

"whiskey and, so far as careful chemical and physiologic experi-
"ments show, does not possess any other drugs in sufficient quan-
"tities to give any appreciable therapeutic effect."

And again:

"The Journal believes that the exploitation of Wine of Cardui
"is vicious and fraudulent."

These statements, I tell you, are libelous per se in that they charge that the plaintiffs were guilty of perpetrating a fraud upon women who purchased Wine of Cardui, in manufacturing and putting the same upon the market as a woman's tonic possessing medicinal value, with full knowledge, actual or constructive, that it was worthless and produced no medicinal effect except from its alcoholic content.

In order to justify this charge it will be necessary for the defendants to prove: First, that Wine of Cardui is worthless and produces no medicinal effect except from its alcoholic content. And, second, that the plaintiffs had knowledge or should have known of such fact while manufacturing Wine of Cardui and placing it upon the market.

You are also instructed that the following paragraphs, which are in the same article published by the defendants in THE JOURNAL of July 18, are also libelous per se, and I am also quoting from the second count.

"The older and new claims for Wine of Cardui were compared
"and it was shown that while direct lies have been removed from
"the labels and cartons of Wine of Cardui — which would render
"the manufacturer liable under the Food and Drugs Act — the
"most outrageous falsehoods were still printed in booklets sent
"out to women who answered the Company's advertisements. These
"booklets are not subject to the penalties of the Pure Food Law."

And again:

"As it has been said before, however, the alcohol content of
"Wine of Cardui is but a minor indictment against the product;
"the basic objection to it is that the business has been built on
"deceit. To summarize, the claims made in recent advertising
"sent out by the Chattanooga Medicine Company, but not subject
"to the supervision of the Food and Drugs Act, were still false,
"fraudulent and vicious."

Those statements are libelous per se, in that they charge the plaintiff with fraudulent and vicious advertising for deceiving the public and to have builded up their business of the manufacture and selling of Wine of Cardui on deceit.

In order to justify this charge, it will be necessary for the defendants to prove, first: that the advertising done by the plaintiffs and proved in this case was fraudulent. That is, that the medicinal virtues possessed by Wine of Cardui were grossly overstated and that the effects of its use in female diseases for which it was recommended were not merely exaggerated, but were grossly misrepresented and that the plaintiffs knew or ought to have known, when such advertising was done, that the virtues of Wine of Cardui and the effects of its use were grossly overstated.

Two defenses have been urged before you. One is justification, and the other, qualified privilege, or as it is sometimes called, "fair comment." It may be well for me to illustrate to you the nature of these defenses.

You may publish of a man the most serious thing possible and, while that publication constitutes libel per se (and by that I mean what is libelous by itself, and of itself without proof of more) you who have published it may come into court and say, "Yes, that is true. I did publish this of the man, but everything I published is true and I justify my publication because I published the truth."

In other words, if I publish of a man that he is a thief and he complains, I may come into court and say that he is a thief and if I satisfy the jury that he is a thief, then the jury must render a verdict for the person publishing the libel. That defense, in the law, we call justification and the reason it is allowed is because, in this country, while we do not permit license, we do allow the freedom of the press and the freedom of speech on the part of every person whether that speech be by word of mouth or written on a piece of paper.

But along with this defense of justification comes another principle, and that principle is that the justification must be as broad and comprehensive as the libel itself.

In other words, to use the same example, if I have charged a man with being a thief I must show to the satisfaction of the jury that he is a thief and if I should show only that he was a man who did not keep his word, or that he had some other unpleasant characteristic, but failed to show that he was a thief, then my defense of justification fails, because it is not so broad as the charge.

This does not mean that my proof must be in the exact words of the charge, but it means that the defense must be substantially as broad as the charge. I hope I have made this clear to you.

If the defendants' characterizations of the plaintiff and his business in your opinion are true, on this branch of the case, if the defense has satisfied you by a fair preponderance of the evidence that it has shown the truth to be substantially as broad as the charge, then the defense has succeeded in meeting the libel by justification.

On the other hand, if you feel and believe from the evidence that the defendants have not proved the substantial truth of their statements, then this defense fails.

The other defense in this case is the defense of qualified privilege. There are two kinds of privilege recognized by the laws of this country. The first, we are not concerned with in this case, but I will tell you of it by way of illustration. A representative in Congress or a United States Senator, a judge upon the bench or a lawyer in the court room may say what he pleases as a part of the proceedings of the House or the proceedings of the Senate or in the Court room, and no person may call him to task. That is what we call absolute privilege and it is allowed because we must in such matters have free, full and fair discussion and there must be no limitation upon the opportunity of a man under such circumstances and so situated, to express himself courageously and freely.

The defense of qualified privilege, or as it is sometimes called, conditional privilege, is this: that any person may discuss a matter of public concern, provided: first, that he has not been moved by actual malice; second, that his comment or criticism shall be fair and reasonable. That is to say, it must be the kind of comment or criticism, which, under all the circumstances of the case, twelve men like yourselves would say was fair and reasonable.

If, in the discussion of a public matter, and in this case I charge you that the American Medical Association in writing the articles about Wine of Cardui was treating a matter of great public concern, if I say in the discussion of a public matter any person publishes of another fair and reasonable comment upon his conduct or business and the publisher is actuated by no element of actual malice, then that publication is privileged, and there may be no recovery whatever because of that publication.

Fair and reasonable comment, however, does not include a reckless disregard for the truth or any statement inspired by malice or evil intent.

In the event that you find by a preponderance of the evidence that the defendant has not justified or proved its claim of justification, that I say will bring the defendants to their second ground of defense, qualified privilege. In that defense, the defendants say in substance that what they wrote and published was a matter of public interest and public concern; that the plaintiff by his advertising invited people to use his medicine, and his system of treatment and that, if the defendants really believed it to be a delusion, they had a right to maintain that it was so; and even if in drawing inferences of bad intention, they fell into error yet, if they wrote honestly and with an intention of exercising their vocation through their magazine fairly and with reasonable moderation and judgment, they would be entitled to a verdict. This I believe to be the law.

Here the plaintiff challenged public criticism by advertising a medicine and a system of treatment, inviting the public to adopt it as a means of curing many of the most destructive diseases common to women. In doing this, I say, it challenged public criticism and if a public writer,

using a reasonable degree of temperance and moderation, as behooves anyone who makes imputations upon others, if a public writer thus discussing the subject in the exercise of his vocation, falls into error as to the facts or inferences and goes beyond the limits of strict truth he is nevertheless privileged if he acts in good faith. The occasion is a privileged one, and if the privilege is exercised honestly and faithfully, and with reasonable regard to what truth and justice require, then, though he may exceed the limit of what he can legally prove to be the truth, he is protected.

It is not therefore necessary in this case that the plea of justification of the truth should appear to be made out if you think the writer of the articles complained of was in the reasonable or honest exercise of his vocation as a public writer, even though he was not fully warranted in drawing the inferences he did as to the conduct of the plaintiff and though it may be that he was not entirely justified by the truth.

You must take into consideration the circumstances under which the article was written, the purposes for which the American Medical Association was organized and the character of its work. If you believe that the article was written with an honest intention and that the writer believed that the plaintiff's system was delusive and that the medicine had no therapeutic value and that its only active principle was the alcoholic content, you are to take all of these things into consideration in making up your mind whether the thing published was justified even if it were not true.

If you believe from the evidence that the writer of the article did not write from personal spite or professional malice, but wrote honestly to denounce what he honestly believed a system of quackery and imposture and to do his duty to the public and he believed the things he was writing, then there can be no recovery in this case.

The American Medical Association is a corporation not for profit organized and operated in the interest of mankind and for the advancement of the science of medicine and surgery. Its publications are many and reach upwards of 75,000 physicians and surgeons. No attack has been made on this organization as such and you may assume that it had the right through its Propaganda Department to criticize favorably or unfavorably any method of treatment for diseases by medicine or surgery. It must, however, confine itself to legitimate criticism. It had the right to advise its doctor subscribers that, in its opinion, Wine of Cardui had no therapeutic value, and that there was nothing potent in it save its alcohol.

If this were the case with John A. Patten, which I emphasize to you it is not, complaint might justly have been made that the articles of the defendants overstep the bounds of fair comment and criticism or qualified privilege. It was not necessary in the interest of humanity for the defendants to criticize Mr. Patten in his church relations. But this suit involves purely a business proposition and no consideration may be paid by you to the feelings of the surviving partner, however lacerated they may be, or to the feelings of his family, however keenly his family and relatives may have suffered.

The plea of fair comment or qualified privilege will not avail a defendant who is proved to have acted maliciously with a reckless disregard for the truth. The burden of proof under a plea of fair comment or qualified privilege is on the plaintiff, and any facts that would go to show malice would tend to rebut the defense of fair comment, or it may be inferred from the terms of the article itself. If the right to publish fair comment on a matter of public interest is misused to gratify any indirect or personal motive of the writer, the malice thus shown destroys the defense.

There has been no direct evidence offered by the plaintiff in this case showing that the defendants were actuated by malice in publishing the article in question. It is for you to determine under all the circumstances in evidence in this case, whether such malice may be inferred from the terms of the articles themselves.

The plaintiff is required in every civil case to prove his case by a preponderance of the evidence. The defendants when they set up an affirmative defense, such as a plea of justification, have the same obligation. This does not mean that they have to prove their case by a greater number of witnesses. It means that the evidence must overbalance, even though by a little, on one side, that of the evidence on the other side. That is what we call "preponderance."

So far, however, as the defendants affirmative plea is concerned, the plea of justification, it involves a charge of fraud and deceit. The law in this case, while it does not require the proof to be made beyond a reasonable doubt, yet it requires you to be satisfied by a clear preponderance of the evidence, that a fraud has been made out, because fraud is never presumed.

Under the instructions which I have given you, you will render a verdict for the defendants if you believe from the preponderance of the evidence that this libel was justified and, when I say "preponderance of the evidence," I mean a clear preponderance of the evidence.

Or, if under the head of "qualified privilege," you believe from the evidence that the facts complained of in this article of July 18, 1914, constitute, under all the facts and circumstances of the case, a fair and reasonable comment or criticism of the plaintiff and his business.

Should you think to the contrary, you will render a verdict for the plaintiff for damages, as I will define them, in such an amount as you may deem proper. If you believe the defendants have justified in this case, there can be no recovery. If you believe the defendants have not justified, then if you believe the articles complained of are fair comment and criticism, in that case the plaintiff cannot recover.

If on the other hand, you believe the defendants have not justified nor made out their defense of fair comment or privilege, your verdict must be for the plaintiff.

You are the sole judges of the credibility of the witnesses and the weight that should be given to their evidence. You may take into consideration their interest, if any, in the outcome of the trial; their relation, if any, to the parties; their demeanor while testifying, their frankness and candor while on the witness stand or the contrary as the case may be. The fact, if it is a fact, that they have been contradicted or corroborated by other credible evidence or circumstances in evidence and, all things considered, you are to determine what weight is to be given to the evidence of each.

If you believe from the evidence that any witness has intentionally or knowingly sworn falsely as to any material fact or circumstance, you are at liberty to disregard altogether the evidence of such witness except in so far as it may have been corroborated by other credible evidence or circumstances in evidence.

Now, as to the measure of damages. Damages which are awarded in libel cases are of three kinds; normal, substantial and vindictive. Vindictive damages are sometimes known as punitive or exemplary damages. Nominal damages are awarded when the action is a proper one to bring, but the plaintiff has not suffered any substantial monetary damage and does not desire to put the money into his pocket, because of the things written. Nominal damages in this jurisdiction amount to one cent.

Substantial damages are awarded when the jury honestly endeavors, as men of business, to arrive at a figure which will fairly compensate the plaintiff for the injury which he has in fact sustained.

When words used are not libelous per se, that is, when they on their face are not of such a character as the law will presume to be necessarily prejudicial to the plaintiff's reputation, proof must be given to show special damages resulting from their publication. But when the words used are libelous per se, that it, when on their face they clearly must have injured the plaintiff's reputation, or in the case of a partnership, the business or business reputation of such parties, a substantial amount may be recovered without giving any evidence of actual pecuniary loss. The reason of this

rule is that while it is apparent that the libelous words must necessarily injure one's reputation or business, yet it is often impossible for the person libeled to prove even the approximate amount of damages suffered by him, and the law therefore leaves the matter to the reasonable discretion of the jury to fix what they may believe to be just compensation after giving due consideration to all the facts and circumstances proven.

The case now before you is one that is being prosecuted by Z. C. Patten, Jr., as surviving partner in the firm of John A. Patten and Z. C. Patten, Jr., who were doing business under the firm name of the Chattanooga Medicine Company.

When libelous words have been published with reference to a partnership business, an action may be maintained for such publication by the partners jointly to recover damages measured by the rules stated. Furthermore, if there be published of one member of a firm, libelous words of such character that they reflect on the credit and the integrity of the firm and naturally affect the firm's business, a joint action may be maintained by the partners to recover damages suffered by the firm.

It is also the law that when a publication as to a firm's business or one or more members of the firm is libelous per se, that is, that it is of such a character as to naturally injure the firm's business, substantial damages may be recovered in a joint action by the partners without their proving specific damages. In such a case punitive damages may also be recovered if the facts be such as justify the awarding of such damages under the principles hereinbefore stated.

But in this case, in determining the amount of actual damage which Z. C. Patten is entitled to recover you must keep in mind the distinction between the damage which John A. Patten in his individual capacity could have recovered had he lived, and those which the firm alone is entitled to have awarded them in this case, if any. You cannot in this case award any damages for any mental anxiety or suffering endured by John A. Patten or by Z. C. Patten, Jr., in consequence of the publication of the articles in question, nor for any effect the libelous words may have had upon the standing of John A. Patten in the Methodist Episcopal Church, or upon his relationship thereto, or for any effect that they may have had on any private business carried on by either of the partners of the firm.

But you should take into consideration the character of the charges published by the defendants both about the business in which the firm is engaged and either of the partners personally and if those parts of the articles which refer to either of the partners, individually are of such a character that they reflect upon their integrity in connection with the business prosecuted by the plaintiffs, and therefore upon the firm's standing and business integrity, then such charges should be looked into in estimating damages as well as those relating to the firm and its business.

In certain cases the jury is permitted to award punitive or exemplary damages in their desire to signify their sense of the defendant's conduct by fining him to a certain extent, and therefore punish him by awarding smart money or a sum in excess of what would be adequate compensation for the injury of plaintiff's reputation. It is sometimes stated that a jury may, in addition to compensatory damages against a defendant, by way of punishing him, and as an example to others, assess such damages as in their sound judgment, under all the evidence in the case, they believe he ought to pay.

But this doctrine of punitive damages requires on the part of the jury a high degree of watchfulness to prevent it from being perverted and from being extended beyond the real principle on which it is based by allowing the plaintiff to characterize the acts of the defendant with a degree of enormity and turpitude which the law does not affix to them and demand punishment for fictitious offenses and thereby put money in his own pocket under the guise of protecting society. Exemplary damages or punitive damages may be allowed by a jury in actions for libel when, on a consideration of all the facts and circumstances of the case, they find that the publication has been made with a reckless disregard of the rights and feelings of the persons libeled as well as where they find that it has been inspired by hatred or ill will towards or an intent to injure him.

I will give you two forms of verdict. If you find for the defendants, you will sign the form which reads "We, the Jury, find the defendants not guilty." If you find for the plaintiff, you will sign a form which reads, "We, the Jury, find for the plaintiff and assess his damages in the sum of" —— blank dollars, filling in such sum as you may be satisfied under all the circumstances of this case, will make adequate compensation.

Are there any suggestions, gentlemen?

Mr. Hough:—We except to that part of your Honor's charge which relates to the release.

THE COURT:—Yes, that will be noted.

Mr. Hough:—And which states that there was no violation of the terms of their agreement as set up in the replication in connection with their rejoinder.

THE COURT:—Every point that may be urged against the Court's striking out the first count will be preserved in the record.

Mr. Hough:—Then we object to your Honor's charge with reference to qualified privilege in view of your Honor's action on demurrer to a plea of that kind and we particularly object to your Honor's failing to tell the jury that there can be no qualified privilege or fair comment except upon matters which are proven. There can never be a comment which is fair or a qualified privilege upon a matter which is in dispute, nor can there be a fair comment or privilege with reference to an attack on the character as distinguished from an attack on the thing itself. We think that is the law also.

THE COURT:—I explained to the jury that every finding they make must be based upon the evidence. That was in the general charge.

Mr. Hough:—Now we wish to except further to your Honor's statement that there was no evidence of good faith or want of malice, without drawing the jury's attention to the fact that the republication, the reprinting and the circularizing are of themselves evidence of malice.

THE COURT:—I intended to direct the jury's attention to that point when I said that they may take into consideration the articles and all of the articles that have been written and all of the evidence in the case and make up their minds whether from all the circumstances, there was malice.

Mr. Hough:—Now, your Honor, we except to that part of the charge, which refers in connection—we are objecting generally to everything you have said about fair comment and I want to point out the things, if I can recollect from the charge what they are—that they could consider whether this was done in good faith and it was fair comment and without malice. We contend that they cannot consider that when the defendants did not put a word of evidence before the jury to show that they did it in good faith and were without malice.

THE COURT:—That position would be quite sound if the matter of fair comment and privilege must be brought to the attention of the Court by special plea, but so long as it must be shown or may be shown, under the general issue, I am of the opinion that it is for the plaintiffs to prove the malice. So that point will be saved.

Mr. Hough:—Then there was one other addition to your Honor's instructions which we would like to have your Honor consider as to whether you should not give it in connection with the charge.

(The instruction proposed by counsel for plaintiff is in the words following):

"In giving you the instructions I have given you gentlemen, "upon the question of fair comment or criticism, it is proper for "me to instruct you that under the pleadings in this case, you "cannot consider this question at all except upon the measure of "the damages to be awarded; for the plea of the general issue "(the publication of the articles being undisputed) admits the "falsity of the charges complained of and thus admits the right "of the plaintiff to recover some amount; the amount which you "might otherwise find to be mitigated or lessened only to such "extent as you, in the exercise of your sound discretion may deem "right and proper, if you should find as a matter of fact that the "libelous matter complained of, or any substantial part of it, can "be fairly said to be fair comment or criticism."

THE COURT:—I am inclined to think that I can give this to the jury, but to save extended argument on it here in the presence of the jury, I will show this to Mr. Scofield just to see if he has any suggestion to make before I give it. We don't want to get any error on the question of damages.

Mr. Hough:—Then I wish to also take exception to your Honor's statement that there was any burden on us to prove actual malice.

THE COURT:—That may be done.

Mr. Hough:—And to the failure of your Honor to charge that the last paragraph, to the effect that shame should be brought into partnership with the man—

THE COURT:—If I have overlooked that in the article of July 18, the jury should be told that that is libelous per se.

Mr. Hough:—I think so, yes.

THE COURT:—Have you the article there so I may read it to the jury? I perhaps dropped into error because I took the things I call libelous per se from your statement.

Mr. Walker:—If is there on page 17 of our suggestions at the bottom of that first column on the left hand side.

THE COURT:—Gentlemen of the jury, you may understand that I regard this portion of the article of July 18 as libelous per se as well as the others to which I have called your attention:

> "The law may better conditions in some respects, but whether it "is bad booze or poisonous patent medicines that are dispensed, "the only way really to accomplish anything is to bring shame into "partnership with the man who makes money out of it."

Mr. Walker:—There is one point more. In your statement of responsibility, you said something about actual malice in the writer. Actual malice may be established by the repetition of the article and by the continual assertion of its truth under the plea of justification up to the very finish of the case, which they have done here.

THE COURT:—The jury may understand that the repetition of the article or the substance of it is evidence which they are to consider in arriving at the verdict on the question of malice.

Mr. Walker:—The repetition and the continual argument or its truth to the final finish of the case is an element as to whether they had actual malice.

THE COURT:—And the jury may so consider that. I want the jury to consider further that when I used the words "writer" and "publisher," that I regarded the writer and publisher here as one and when I referred to one, I referred to the other as well. I did not mean to distinguish between some editorial writer who wrote the article and the journal or magazine which published it.

Mr. Walker:—If by continuance of repetition there be actual malice, malice of the writer or publisher is malice of the Association.

THE COURT:—There is no question about that. If you find that there was malice in this case, it makes no difference whether it was malice on the part of the writer who wrote the article, or by the Medical Association that sent out the article through its Propaganda Department.

Mr. Loesch:—We except to that portion of your Honor's charge.

Mr. Walker:—Just one moment. I wish to take an exception to your Honor's failing to instruct the jury to leave it as an issue of fact that on those things that you have said were libelous per se, we had a right to recover and they should have been instructed on those things that you said were libelous per se, to render a verdict for the plaintiff.

THE COURT:—On all of those matters that I have characterized as libelous per se there must be a verdict for the plaintiff unless you find that the plaintiff (a misstatement for defendants) has justified and proved the truth or the substantial truth of those things or unless you find that under the law of fair comment and privilege as I have given it to you, they have acted only within their privilege.

Mr. Walker:—Your Honor used the word "plaintiff" instead of "defendant."

THE COURT:—I should have said that the plaintiff is entitled to recover.

Mr. Hough:—One other point upon which I think your Honor should have charged the jury, and that was the question as to the fact of the worthlessness of the medicine being a matter of opinion.

THE COURT:—No, you may save that point. I gave that very serious consideration.

Mr. Loesch:—The only point, your Honor, that we have is that you told the jury that we must prove the justification by a clear preponderance of the evidence.

THE COURT:—You may save that point.

Mr. Loesch:—We except to that.

Mr. Charles J. Scofield:—(Referring to suggestion for instruction tendered by plaintiff, and hereinbefore set out in full.) We object to that.

THE COURT:—I would like to have you state briefly your objection.

Mr. Charles J. Scofield:—Our objection is that that practically tells them that the defense of fair comment is not before the jury under the general issue. That tells them in effect that there is no evidence on fair comment under the general issue before the jury.

THE COURT:—It is perfectly well settled that you cannot make proof in mitigation of damages where you have a plea of justification.

Mr. Hough:—Nor can any of the facts offered in support of the truth under the plea of justification, be considered—

THE COURT:—Under the law as I conceive it to be—

Mr. Hough:—I just want to finish the statement—cannot be considered in mitigation of damages.

THE COURT:—Under the law as I conceive it to be, the defense of fair comment and privilege, qualified privilege, is just what it means. It is a defense and not something that goes to permitting the plaintiff to recover only in mitigation of damages. The reporter may copy this as having been asked of the Court to give the jury and refused and you may preserve the exception.

Mr. Hough:—May we consider that the requests which we made of the Court, which were not given—

THE COURT:—I could not do it. I did not have time. There were something like 200 pages all told handed up to me by counsel. It was absolutely out of the question.

Mr. Charles J. Scofield:—We have a great many, but we are not asking them of your Honor.

Mr. Hough:—We wish to save an exception to your Honor's failing to instruct the jury or rather that on the points upon which they did not justify there should be an instructed verdict for the plaintiff.

THE COURT:—Yes, you may save that.

Mr. Williams:—I do not want to tax your patience, but I prepared that little instruction requesting that the—

THE COURT:—This substantially says, Mr. Williams, that notwithstanding the jury might be of the opinion that the article was written under the privilege of fair comment and criticism, nevertheless there must be a verdict for the plaintiff, and this goes only to the amount of damages.

Mr. Williams:—The theory of it was based on the O'Malley case where it said or where they made the criticism that it came under the plea of general issue which admitted the falsity of the charge and where they then plead in mitigation. That is held in that case.

Mr. Charles J. Scofield:—We have got an abundance of authority to sustain our position.

THE COURT:—Gentlemen of the jury, as my distinguished associate has frequently said, when you go into your jury room, don't leave your common sense behind. Remember that this is a business proposition. You are twelve men coming from different walks of life and each one of you looks at things from a little different angle. I undertake to say that if you will take your common sense into the jury room with you, that the composite picture which you get of this evidence will result in a verdict which will be a substantially correct verdict. Now the exhibits, gentlemen, you can arrange with the bailiff, for all the exhibits ought to go into the jury room.

WINE OF CARDUI SUIT

(Continued from page 2113)

May 15, 1916, Afternoon

TESTIMONY OF DR. FRANCIS E. THORNTON

The Court met pursuant to adjournment. Dr. Francis E. Thornton was called as a witness for the plaintiff in rebuttal.

DIRECT EXAMINATION BY MR. HOUGH

Dr. Thornton testified that he is a physician and has practiced in Chicago for 28 years. He graduated from the Bennett College of Eclectic Medicine and Surgery. He was ten years on the staff of the Frances E. Willard Hospital, 14 years on the Cook County Hospital staff, 6 years with the Norwegian Tabetha Hospital, and 5 years on the Norwegian Deaconess' Hospital staff. He taught physiology in the Bennett Medical College for six years, diseases of children for two years in the Bennett Medical College, and internal medicine in the Bennett Medical College and Chicago College of Medicine and Surgery for eight years. He does general practice, the greater percentage of his work being the diseases of women and children. He does only minor surgery. He believes that during his practice of 28 years he has treated 30,000 to 40,000 women for female diseases covering the entire range of female troubles from puberty to the menopause, including pregnancy. He testified that he has had over 4,000 cases of pregnancy and has used viburnum prunifolium in his practice in all cases of diseases of women. He has used carduus benedictus for diseases of women for about 20 years.

The witness stated that viburnum prunifolium has been one of the principal remedies that he has used in the treatment of diseases of women. Carduus benedictus is frequently indicated for female troubles. He believes that the effect of combining the action of these two drugs would be to produce a synergistic action and it would take less of each drug to produce the desired results. The smallest dose of viburnum prunifolium which he has used in his practice is three drops of the fluidextract or of the specific tincture which would represent a grain for a drop.

The smallest amount of carduus benedictus which he has used is one tenth of a drop or one tenth of a grain and he has obtained results. He would give them every half hour in fluidextract. He does not believe that the effect was due to the alcohol.

Q.—Have you an extensive practice in Chicago now? *A.*—I would rather somebody else would say that. I know I pay a good deal more income tax than I would like to.

Q.—On an average, how many patients do you see a day? *A.*—From 20 to 40.

Q.—Of those patients, how many of them would be on an average women or girls with some female troubles? *A.*—Two thirds of them.

Q.—Two thirds of them? *A.*—Yes, sir.

Dr. Thornton testified that he is familiar with symptoms of amenorrhea, menorrhagia, dysmenorrhea and metrorrhagia. When cases came to him that required surgical treatment, he refers them to a surgeon. Eighty per cent. of his women patients are treated medically. He stated that he was familiar with displacements of the uterus and with dynamics of the female pelvis and with prolapsus; that there are cases of uterine displacements that may be cured by hygienic measures and medicine. Under certain conditions carduus benedictus and viburnum prunifolium would be indicated for these conditions.

Q.—Would those medicines, doctor, be indicated for vaginitis, when not produced by malformation, or which did not require surgical treatment? *A.*—That would depend upon the cause.

Q.—Dependent upon the cause? *A.*—Yes, sir.

Q.—Are there any cases in which they would be indicated? *A.*—Yes, sir.

Q.—What class of cases would they be indicated in? *A.*—Why, in cases that were not due to malignancy, or specific causes.

Q.—What would you say are specific causes? *A.*—Well, gonorrhea.

Q.—In your school, do you treat causes or symptoms? *A.*—Symptoms. I would like to make a difference there. We treat the indication, a group of symptoms may produce an indication. It may be one symptom alone.

Q.—Then you mean you treat either the symptom or the group, which means the indication? *A.*—We treat the indication.

Q.—Doctor, is there any medicine which is regarded as indicated treatment for the inflammation due to gonorrhea? *A.*—Well, it would depend upon the indication in gonorrhea, as in any other disease.

Q.—Are there any circumstances under which medicine would be indicated? *A.*—In the treatment of gonorrhea?

Q.—In the treatment of inflammation, which might have gonorrheal origin. *A.*—Yes, sir.

Q.—Would those medicines contain alcohol? *A.*—They may. Many prescriptions for the purpose do contain alcohol. Montgomery gives one in his textbook.

Q.—Who? *A.*—Montgomery.

Mr. T. J. Scofield:—That is objected to.

(The latter part of the answer was then read.)

THE COURT:—Strike it out.

Mr. Hough:—That, as I understand, if the Court please, is already in evidence, that prescription.

THE COURT:—It was volunteered by this witness. If it is in, it is in.

To which ruling of the Court the plaintiff, etc., excepted.

Mr. Hough: *Q.*—Do you know of any such prescription in any textbooks?

Mr. T. J. Scofield:—That is objected to as immaterial.

THE COURT:—The objection is sustained.

To which ruling of the Court the plaintiff, etc., excepted.

THE COURT:—If that question were put, we could put the entire medical library of the country in. It may be that I am wrong here.

Mr. Hough:—Your Honor ruled in the beginning of the trial—

THE COURT:—In cross-examination, I can see very well that it is improper to call the witness' attention to medical works unless he says he relies upon those books and makes them the basis of his answer.

Mr. Hough:—That is proper cross-examination. Now, whether in direct examination you can ask a witness about it, I am not so sure, because you have the book to produce, if it is in the book. The book is perhaps better evidence than the witness who is merely quoting the book as hearsay.

Mr. Hough:—Does your Honor hold then that, without asking the question, we are entitled to read from the book?

THE COURT:—I am not holding at this time that you are entitled to introduce the book, but the book is certainly better evidence than what the witness says on direct examination.

Mr. Hough:—Well, under some circumstances I can conceive that the witness—

THE COURT:—In other words, if it is competent in the book, the book must be produced. If it is not competent in the book, clearly it is not competent here.

Mr. Hough:—Except as indicating what the general practice is.

THE COURT:—Well, I am not sure that it does.

Mr. Hough:—Well, except as to the question of the extent.

THE COURT:—No, I think at this time I will sustain the objection.

To which ruling of the Court the plaintiff, etc., excepted.

Mr. Hough: *Q.*—Doctor, in those cases where a medicine containing alcohol is given for inflammations of the vagina, which may have their origin in gonorrheal infection, what is the effect of the alcohol in those medicines? *A.*—It is nil.

Q.—Is it so generally considered?

Mr. T. J. Scofield:—Wait a moment, I object to that, if the Court please.

THE COURT:—He may give his own opinion.

Mr. T. J. Scofield:—Well, I don't object to that.

A.—I think so.

Dr. Thornton stated that medicines containing alcohol are given to young girls at puberty and that in medicinal doses the alcohol has no effect; that they are given to women at the menopause and the alcohol, in medicinal doses, has no effect. He stated that medicines are given during pregnancy as uterine tonics to make labor easier and that viburnum prunifolium and carduus benedictus are such drugs. The witness stated that he would not consider that uterine tonics or sedatives which contained in each dose as much as 48 drops of alcohol had a deleterious effect when taken two to four times a day according to dosage. He believes that such an amount of alcohol would produce no alcoholic habit nor would it have any effect in producing sexual desire.

Q.—Doctor, would you say that a medicine, composed of 30 grains of carduus benedictus and three grains of viburnum prunifolium (or the extractives from them) per dose, in a menstruum of 20 per cent. alcohol, would be indicated generally for menstrual disturbances of women, such as irregularity, exaggeration and suppression? *A.*—The latter part of the question? Indicated generally?

Q.—Yes. *A.*—Well, I would not say that it would be indicated generally. It might be indicated in the treatment of those troubles.

Q.—Well, would you say it would be indicated? *A.*—Yes.

Q.—For menstrual disorders of women, such as irregularity, exaggeration and suppression? *A.*—Yes, sir.

He believes that such a medicine might be indicated for uterine and ovarian troubles not requiring surgical treatment, and might be indicated for use during pregnancy, at puberty, and at the change of life.

The witness stated that in the treatment of vaginitis it is important to keep the bowels open and very important to take antiseptic douches, that under certain conditions, carduus benedictus and viburnum prunifolium in the amounts indicated together with antiseptic douches, and medicine to regulate the liver, would be indicated for vaginitis.

Q.—Would you say that such a medicine could act upon the cause of the disease and have a curative effect upon the seat of the trouble? *A.*—The question is too general.

Q.—What is that? *A.*—I say the question is too general. On the cause of the disease—it might be one of a hundred. Certain conditions it would act, and others it would not.

Q.—You mean vaginitis might be due to a large number of causes? *A.*—Yes, sir.

Q.—And whether the medicine would be good, would depend upon the causes? *A.*—To a great extent.

Q.—Suppose the vaginitis had been due to an unhealthy discharge from the womb, ovaries, tubes or bladder, would such a medicine be indicated? *A.*—Under certain conditions.

Q.—Suppose the vaginitis was of gonorrheal infection—or origin, rather, would such a medicine ever be indicated? *A.*—It might.

Q.—Doctor, do you regard displacements, such as anteflexion and anteversion and retroversion, as being pathological where there are no uncomfortable symptoms suggesting those conditions to the woman? *A.*—Well, a strict interpretation of the word "pathological" would indicate that.

Q.—Well, would you say that that condition would require treatment, if there were no symptoms or group of symptoms? *A.*—It would depend upon the amount of deviation from the normal. You might have a slight deviation that would require no treatment. To any great extent, it would require treatment.

Q.—If it was to a great extent, would there not be symptoms? *A.*—Not necessarily.

Q.—Could that be ascertained without a physical examination? *A.*—Yes, sir.

Q.—How would you ascertain that? *A.*—When there were no symptoms?

Q.—Yes. *A.*—No, you could not determine that without examination.

Q.—Did you say that medicine will cure some of those displacements, or rather the symptoms which accompany them? *A.*—Yes, sir.

Q.—Would these medicines which you have named be indicated for such conditions? *A.*—In some of those cases; yes, sir.

Q.—Have cases of prolapsus of the womb been cured by medicine, without any surgical operation? *A.*—Yes, but with the use of the hygienic measures and as to diet and the patient's position.

Q.—And medicine to keep the bowels open? *A.*—Yes, sir.

Q.—Would this medicine we have been talking about be indicated for that condition? *A.*—In some cases.

The witness stated that inversion of the womb is a rare condition. He has seen only one case in 28 years. Whether operation was indicated would depend on how recently the inversion had occurred. If it was of recent occurrence, operation is the proper treatment, if of long occurrence it is best to let the person become adjusted to it. The use of such a medicine as discussed is sometimes indicated in those conditions; such a medicine is indicated for inflammation of the womb.

The witness stated that it might be indicated in certain cases of sterility, and in cases of threatened abortion it is one of the best remedies that we have; that the hypothetic medicine composed of 30 grains of carduus benedictus or the extractives of 30 grains, and three grains of viburnum prunifolium, or their extractives, per dose, in a menstruum of aqueous solution of 20 per cent. alcohol might be indicated for leukorrhea.

The witness stated that there is a connection between the breasts and the female generative organs through the sympathetic nervous system. He stated that the appearance of the breasts might be suggestive of disease in the female generative organs. If the disease is properly treated it is reflected in the breasts.

Q.—In what way? *A.*—Well, as the general nutrition of the body comes up, after getting rid of the pathological condition of the pelvis, the breasts will begin to fill up and assume their normal shape.

Q.—Doctor, is there such a thing as a scientific and specific remedy for any of these conditions? *A.*—Well, to what conditions do you refer?

Q.—These female troubles, or any of them? *A.*—No, there is no specific for all of them.

Q.—Well, would you say that there is a scientific and specific remedy having a curative effect? *A.*—Yes, sir.

Q.—Doctor, can a woman who has a headache, or pain in the side or back, ever tell that that is due to some menstrual disturbance? *A.*—Yes, sir.

Q.—Under what circumstances? *A.*—Why, when she has it repeated over and over, month after month, the occurrence of the headache and pain in the back and side, coming on just before or at her menstrual period.

Q.—Doctor, can the mere fact that a drug is injected into the uterus either inside or outside of the human body, without having any apparent effect upon it, in ten minutes, indicate that that medicine would have no effect upon the womb, if given in the regular way through the mouth? *A.*—No, sir.

Q.—Would the mere fact that a drug injected in the body of an animal makes no changes, either in respiration, pulse or circulation, indicate that that medicine was worthless for any womb troubles? *A.*—No, sir.

Q.—Doctor, what is a medicinal tonic? *A.*—A medicinal tonic is one that improves the vitality or raises the vitality of the body, or of any specific organ of the body.

Q.—May a medicine be both a tonic and a sedative? *A.*—It may.

Q.—What is the difference between a tonic and a stimulant? *A.*—A tonic raises the vitality of the part or the body to its normal condition. A stimulant produces an overaction of the part of the body.

Q.—Are there different kinds of tonics? *A.*—Yes, sir.

Q.—Is there such a thing as a general tonic? *A.*—Yes, sir.

Q.—Is there such a thing as a uterine tonic? *A.*—Yes, sir.

Q.—Are carduus benedictus and viburnum prunifolium known as uterine tonics? *A.*—Yes, sir.

Q.—What is the difference between a general tonic and a uterine tonic? *A.*—A general tonic exercises its influence on the whole body, and a uterine tonic more specifically upon the uterus.

Q.—May a medicine be at the same time both a general tonic and a uterine tonic? *A.*—Yes, sir.

The witness described the condition known as anemia. He stated that the drugs mentioned might do good in a general way as a systemic tonic. He stated that if anemia is cured, menstruation is sometimes established and sometimes not. Frequently, uterine tonics or ovarian stimulants are required to produce menstruation. He stated that every case of puberty is accompanied by symptoms. A small percentage requires some treatment. When all the symptoms of puberty have occurred and menstruation did not come, treatment would be required. He believes that in one of a hundred cases there is dysmenorrhea during puberty.

CROSS-EXAMINATION BY MR. T. J. SCOFIELD

The witness stated that the 20 per cent. alcoholic menstruum will extract the resins from viburnum prunifolium. The witness uses specific medicines, and the amount of alcohol used to extract the resins from viburnum prunifolium may vary from 48 per cent. to 64 per cent. The amount necessary to extract the virtues depends on the herb. To get all the virtues of carduus benedictus, from 70 to 78 per cent. of alcohol is required. The medicines are not indicated in all cases of amenorrhea. The same applies to metrorrhagia, menorrhagia, and dysmenorrhea. He does not refer altogether to surgical cases. Amenorrhea is sometimes a surgical condition, for example, where there might be affection of the tubes, or ovaries or cellulitis. Medicine would be indicated in causes of profound anemia. It would make a difference as to what the anemia was due to. You would first have to find out the underlying cause and cure it.

The medicine described by Mr. Hough would not be indicated in any case of profound anemia. The witness stated that menorrhagia is sometimes due to uterine polypi. He has treated a good many cases of uterine polypi with viburnum prunifolium. The medicine described by Mr. Hough might be indicated for uterine polypi when there was a contraction of the uterus with a great deal of pelvic congestion, or varicosity with pelvic congestion. He would determine by examination of the patient. He stated that in treating the patients he first diagnosed the condition by making an examination and then prescribed. He would not prescribe until he had done that. He would not say that the medicine was useful in all cases of flooding. He would not consider this medicine a proper scientific treatment in all cases of menorrhagia.

REDIRECT EXAMINATION BY MR. HOUGH

The witness stated that under certain conditions, the addition of alkali to alcohol increased the extractive power. He stated that there was occasionally a case where one might prescribe without making a physical examination.

The witness stated that when any dispensatory speaks of any 30 grains of a drug, it means the extractives from those 30 grains.

DEPOSITIONS*

* The plaintiff — The Chattanooga Medicine Co. — presented some 498 depositions, about 166 being made by physicians. About 115 were read to the jury; the counsel for both sides agreed that the remainder should be considered as in evidence. Some of the depositions will be abstracted later.

May 16, 1916, Morning

TESTIMONY OF DR. WALTER FRANZ VON ZELINSKI

The Court met pursuant to adjournment. Dr. von Zelinski was called as a witness on behalf of the plaintiff in rebuttal.

DIRECT EXAMINATION BY MR. WALKER

Dr. von Zelinski testified that he is a physician practicing in Chicago. He graduated from the Bennett Medical College in 1908 and from the Central States College of Pharmacy and attended St. Ignatius College. He is a lecturer on Materia Medica in the department of Pharmacy at Loyola University and instructor of clinical medicine at the Bennett Medical College. He has been connected with the Loyola University as a teacher since 1909. He is a member of the Chicago Medical Society, the Illinois State Medical Society, the German Medical Society of Chicago, the Tri-State Medical State Society of Illinois, Iowa and Missouri; the Association of Military Surgeons and the American Medical Association. He has treated the diseases of women from puberty to menopause. He also does surgery. He testified that he has treated thousands of women of all nationalities. He used to hold clinics in the medical school. He stated that there seems to be an intimate relation between the ovaries and the breasts and diseased conditions of the pelvis manifest symptoms in the breasts. He has operated on conditions in which operation would give relief. He has removed the uterus and the ovaries. He considers retroversions, retroflexions, etc., pathologic in so far as they are deviations from the normal, but it does not necessarily follow that they give rise to symptoms always. The symptoms are the expression of the disease. There may be displacements of the uterus.

He stated that medicines are practically always indicated in pelvic diseases of women. There are many cases of inflammation where surgical treatment is not required. The witness defined endometritis and metritis and vaginitis. He stated that these conditions might be treated by medicines given through the mouth and are not all surgical cases. He would say that 5 per cent. required surgical treatment. All the others are treated medically.

Q.—Doctor, what is a tonic? *A.*—Well, a tonic as I understand it, is a medicine which so acts upon the system or the organs, as to cause it to perform its function in a nearly normal manner.

Q.—Are there general tonics? *A.*—Yes, sir.

Q.—Are there tonics that act particularly on any given organ? *A.*—Yes, sir; there are general and special tonics.

Q.—What do you mean by special tonics? *A.*—I mean a tonic which influences certain of the organs in the human body.

Q.—How do those tonics act, what is the method by which they act? *A.*—Well, you mean the general or the special?

Q.—First, how are they taken? *A.*—Well, they are taken by mouth, or they may be injected under the skin.

Q.—Take those that are taken by mouth; will you tell the jury, both as a general and special tonic, how they act and how they act on the particular organ so far as you observed it, or understand it. *A.*—Well, a general tonic may cause an increase in the appetite and act indirectly. The patient, through taking more food, is built up, is improved, his blood is improved and certain forms of blood infections may be overcome, mild or severe, and that improves the patient in a general way.

Q.—Now, where they act specially, doctor, how do they act? *A.*—Well, specially, you would use a uterine tonic or a heart tonic, or a liver tonic so-called.

Q.—What do you mean by a uterine tonic? *A.*—Well, I mean by a uterine tonic, a medicine which has an effect upon the uterus especially.

Q.—What do you call that, if you have any name, a medicine that contracts a given muscle? *A.*—Well, I would refer to such a medicine as a stimulant.

Q.—What is pituitrin? *A.*—Pituitrin is the extract of a gland found in the brain, and it is used as a stimulant of the uterus.

Q.—Do you consider pituitrin a tonic or a stimulant? *A.*—No, I consider it a stimulant.

Q.—Would you expect the like action of the tonic on the uterus, that you would find from an observation of pituitrin? *A.*—Would I compare them?

Q.—Yes, would you expect a like action? *A.*—No, because a tonic may be a sedative at times and may act as a sedative, while a stimulant of course always stimulates and produces more action than it really requires, an overaction, as it were.

The witness is familiar with carduus benedictus and viburnum prunifolium, through reading and practical experience. He has used both carduus benedictus and viburnum prunifolium for eight years. He has used them to relieve symptoms of female diseases. He used carduus benedictus as specific medicine, Cnicus Benedictus, a preparation made in Cincinnati. It contains from 60 per cent. to 70 per cent. of alcohol. He considers it a fluidextract. He has also used an extract made by Parke-Davis & Company and also a preparation made by Sharpe and Dohme. He has used the fluidextract and tincture of viburnum. In the fluidextract, he believes that there was 45 to 55 per cent. of alcohol. He sees no reason why these two drugs should not properly be used in combination. By synergistic action, he understands that the two drugs together have better action than either one alone. He believes that carduus benedictus and viburnum prunifolium act in the same way. He considers viburnum prunifolium more of a special tonic with its more particular effect on the uterus, while he looks on carduus benedictus as being more of a general tonic with possibly an effect on the female genitalia. He stated that practically all of the tinctures and fluidextracts in all of the pharmacopeias, all over the world, with one or two exceptions, are made with alcohol and water. There are perhaps thousands of such tinctures and fluidextracts.

Q.—In giving carduus benedictus as you have described it, or viburnum prunifolium in the liquid form, what consideration, doctor, if any, did you give to the alcohol content of those medicines? *A.*—I did not consider the alcohol at all.

Q.—Well, why not? *A.*—Well, because the alcohol is the best solvent to extract the virtues of the drug, and it is a necessary element and the effect of the drug so far overshadows any effect that the alcohol may have, that you pay no attention to it. Then, aside from that, it preserves your drug.

Q.—Now, do you know the medicine known as Wine of Cardui? *A.*—Yes, sir.

Q.—Assume, doctor, that the medicine, Wine of Cardui, contains the extractives of 40 grains of carduus benedictus, and of six grains of viburnum prunifolium, in a solution of 20 per cent. alcohol, to the fluidounce, and that the dose is the extractives of 30 grains of the one and three grains of the other in 20 per cent. alcohol. State whether or not, in your opinion, such a medicine given four times a day, would produce in women, young girls, or women at the time of the menopause, an alcoholic habit? *A.*—No, it is absurd.

Q.—Will you tell the jury why not? *A.*—Why, because the amount of alcohol is completely oxidized.

Q.—What do you mean by that? *A.*—I mean that it is completely—it goes through a complete process of combustion in the human body. There is no accumulation, or toxic effect.

Q.—In taking it that way, would there be any cumulative effect or any desire created? *A.*—Well, not unless—

Q.—I mean, of the alcohol, doctor. *A.*—Would there be an accumulative effect?

Q.—Of the alcohol. *A.*—No.

The witness stated as his opinion that viburnum prunifolium is a very good uterine tonic and carduus benedictus a general tonic, and he believes that he has had results from it in special cases, in which the symptoms were referable to female genitalia.

Q.—Doctor, in treating diseases, as for suppression, irregularity, or exaggeration, in reference to the menstruation of women or girls where surgical operations are not necessary, what would be a proper method of treatment? *A.*—Well, of course, that would depend upon the cause of the—

Q.—Well, take, say, a case of endometritis. *A.*—Well, that would also depend upon the cause and the symptoms manifested. The treatment, as a general thing (say that it was not surgical), would be general and local.

Q.—What would the general treatment be, and what would the local treatment be? *A.*—Well, you would aim to relieve any local condition by applications, direct applications, douches and tampons, and improving the—the general treatment would be to improve the hygiene, recommend a good nourishing and easily digestible diet and give them such medicines as might be indicated by the symptoms. If there was lack of appetite, something to promote the appetite; if there was anemia, something to act upon the blood and increase the number of red blood corpuscles. You might give them a special treatment, if you located a definite infection. You might treat them with vaccines, or bacterins.

Q.—Assuming that it was a malignant infection. Take a case where there was an inflammation, endometritis, and medicines were the method of treatment without the injection of the serums. What sort of medicines would be given? *A.*—Well, that would—as a rule the medicines are required to act upon the uterus and general functions and of course the improving of the hygiene, and recommending of certain special diets and local applications.

Q.—From what you know of the two medicines—speak louder, doctor. *A.*—Yes, sir.

Q.—From what you know of the two medicines, carduus benedictus, and viburnum prunifolium, would they be indicated in cases of that character? *A.*—They could be used in those cases; yes, sir.

Q.—You are familiar, of course, with amenorrhea, menorrhagia, and all those, flooding and painful menstruation—without repeating the names of them. *A.*—Yes, sir.

Q.—State whether or not the Wine of Cardui that I have spoken of, with the dosages named, state whether or not that would be a proper medicine to give to a young girl, suffering from dysmenorrhea at the time of puberty, where there was no malformation or misplacement of the uterus. *A.*—You mean what would be the effect of this medicine?

Q.—Yes. *A.*—Well, I consider it a mild, harmless tonic. Of course, whether it would have any effect depends upon the cause, but you could use a preparation of that sort, because very often there is a condition of debility there which requires a tonic there. There is a painful condition, reflex pain of various sorts that have their origin in the uterus, in which you could use the viburnum for its sedative, tonic effect.

Q.—In your experience, how many girls whose puberty or menses are establishing themselves at the time of puberty, would you say suffer pain and disagreeable feelings at the time of the monthly period? *A.*—Oh, I would say 90 per cent. of them.

Q.—Would the medicine, such as Wine of Cardui—

Mr. T. J. Scofield:—What was that? What was that question?

Mr. Walker:—He says 90 per cent. of them.

Mr. T. J. Scofield:—But what was the question?

Mr. Walker:—That young girls at the time of menstruation suffered pain and disagreeable symptoms.

Q.—I mean have symptoms of distress and pain, is that what your answer had reference to? *A.*—Yes, sir.

Q.—Now, could medicines containing alcohol, tonics, be a legitimate medicine to give for any such conditions of suffering? *A.*—How much alcohol?

Q.—Well, as prescribed in the dose named of Wine of Cardui that I spoke of a while ago, 48 drops of alcohol to the dose? *A.*—A medicine like that could be used without any harmful effect. It might do them some good.

Q.—Doctor, take a medicine of that kind, would you refrain from its use on account of the alcoholic content, in a young girl? *A.*—Not at all. In fact, I might use it because of that amount of alcohol.

Q.—State whether or not in your opinion that would tend to create an alcoholic habit in a girl at the time of puberty? *A.*—Not at all.

Q.—Or state whether or not in your opinion it would increase her passions at that particular time? *A.*—No, sir; not any more than the condition itself would.

Q.—Would it enhance anything or increase the condition? *A.*—No, sir.

Q.—Now, while I am on that subject, doctor, I will ask you in reference to the time of a woman's menopause. Are you familiar with the disease known as cancer? *A.*—Yes, sir.

Q.—State whether or not in your opinion the taking of the medicine, Wine of Cardui, in the dosages that I have already given you, say three or four times a day, would, in your opinion, tend to mask the cancer, if the cancer was present? *A.*—Certainly not.

Q.—Will you tell why? *A.*—Well, because when the cancer produces symptoms locally or general even, that is, manifests itself by pain or local discharges, why so far as a medicine like that masking the symptoms, is a good deal like putting water on a duck's back, because the pain—oftentimes it demands tremendous doses of narcotics to relieve them and the local conditions, such as the discharge—it would have no effect on them whatever.

Q.—Mr. Fowler wants me to ask this; Mr. Fowler wants to know if you deem that an operation can cure cancer after it is there, after there is cancer? *A.*—Well, if it is discovered in time, you can get at it practically before the symptoms, marked symptoms have set in. I don't believe that it is hardly curable when marked symptoms have set in, if they are there to any extent.

The witness stated that he has had experience with pregnancy; that medicines might be given to relieve symptoms during pregnancy. He has treated cases of uterine displacements medically. He has seen cases where after general and local treatment the uterus has apparently resumed its normal position. He has read the Home Treatment Book of the Chattanooga Medicine Company for 1913. He considers the instructions outlined in that book as being fair treatment. They are reproductions of what you find in the standard works of gynecology. On motion, that portion referring to standard works was stricken out.

The witness mentioned as causes of vaginitis, sexual excesses, infections and as a complication following certain systemic diseases. Discharges from the lining of the uterus cause vaginitis. There was read to the witness a statement from the Home Treatment Book, concerning the causes and treatment of vaginitis. He stated that in a general way it was a useful treatment in such conditions. As far as gonorrhea is concerned it would only be a part of the treatment. He would go much further than that, than the book indicated.

He considers Wine of Cardui together with the treatment mentioned in the Home Treatment Book as a useful treatment in uterine prolapse and displacements. He considers inversion of the uterus an infrequent thing.

Carduus benedictus and viburnum prunifolium would be indicated in some cases of sterility as tonic treatment when there was debility and irritability of the uterus.

The witness testified after objection that the pharmacologic test on a dog or cat or any of the lower animals which did not show a result would not mean anything. He stated that there were many drugs whose value was known clinically before it had been established pharmacologically.

He mentioned as such drugs, cinchona, digitalis and cascara. He stated that we have a good many drugs whose mode of action is not known, while it is known that they have a clinical effect.

Q.—Now, doctor, suppose a physician operating on a woman who is under anesthesia were to inject into the uterus of such a woman three or four or five teaspoonsful of the medicine Wine of Cardui, that I have been speaking of heretofore, containing the drugs named in the proportion named, and the uterus showed no signs of action, or nothing was observed as to the action of the drug in the uterus in ten minutes. State whether or not in your opinion—state what in your opinion would be the value of such a test in showing or not showing the usefulness of that drug upon a diseased human being. *A.*—I would consider that a very rotten experiment.

Q.—What do you mean by that? *A.*—I mean by that that you could not prove a thing by that, whether it acted or prove that it did not.

Q.—What? *A.*—Because that is an isolated instance, and you don't know what the modifying circumstances might have been there.

Q.—Take the same case, doctor, and assume that after ten minutes had expired in which the Wine of Cardui had been used in that illustration, a certain amount of pituitrin had been injected in the same womb, and the womb contracted in a short space of time, one or two or three minutes, I don't remember which. What would that demonstrate as to Wine of Cardui, if anything? *A.*—I don't see that it would demonstrate anything. If I could explain that—

Q.—Well, go ahead, why? *A.*—Well, we have for instance—we have drugs that we use as a heart tonic. Atropin is one, and strychnin is one. I can put some atropin in your eye and dilate your pupil, and if I put strychnin in there it would not do any more than irritate a little bit, but they both will have a stimulating effect on the heart when taken by mouth or injected under the skin. They act in different ways.

The witness stated he first learned of carduus benedictus when he was working as a clerk in a pharmacy sixteen years ago. He would look on carduus benedictus as a mild tonic in cases of pregnancy with disturbances. He uses viburnum prunifolium in certain irritable conditions of the uterus when there is a tendency to miscarry. He believes that he had had beneficial results with viburnum prunifolium in amenorrhea.

Q.—Now, take cases of dysmenorrhea, menorrhagia and amenorrhea; would the carduus benedictus be indicated in any of those cases, independent of viburnum? *A.*—Yes, in some of those cases.

Q.—Now, when you combine it with viburnum, would you say it would be indicated? *A.*—Yes, it would be indicated in that way, too.

Q.—Bearing in mind then that the medicine, Wine of Cardui, contains both drugs, would they be indicated—would that medicine be indicated in those cases? *A.*—Yes, it could be used.

Q.—As you have observed them, the results in those cases with carduus benedictus—you have answered about viburnum prunifolium—what was your opinion of the use of the medicine, as obtaining results? *A.*—Well, I have got results in those cases in which I have used carduus benedictus.

Q.—Good results? *A.*—Yes, sir.

CROSS-EXAMINATION BY MR. T. J. SCOFIELD

Dr. von Zelinski stated that treatment would depend on the cause of the condition. It would be essential to determine the cause and the treatment would be determined by the cause. You do not treat different causes with the same medicine.

Q.—Well, you would not treat the conditions which resulted from the causes, either, would you, by the same medicine? *A.*—Well, in a good many of these cases, of course, your patient's vitality becomes lowered, and, as a general proposition, you use tonics.

Q.—Well, I am not asking about tonics. You might use a tonic as a part of your treatment? *A.*—Yes, sir.

Q.—But I say, depending on the causes you determine to treat, and if you felt you wanted to give a tonic too, as a part of it, that would constitute not the entire treatment, but part of it, isn't that true? *A.*—Yes, sir.

Q.—That is absolutely true, is it not, doctor? *A.*—Yes, sir; it is.

Q.—Now, you say in connection with your experience in the practice of medicine, you have found that there are many conditions which arise in female troubles and complaints, which may be treated medicinally—possibly all of them—and that there are also a certain per cent. of them that require surgery, even though you have given them the medicinal treatment; is that right? *A.*—Yes, sir.

Q.—Now, how does your patient learn, doctor, whether or not the trouble from which she is suffering is one which requires surgical attention? *A.*—How do we determine that?

Q.—No. I say how does the patient, the woman determine that, or ascertain that fact? *A.*—Well, as a general rule, they have taken medical treatment, perhaps for a long time, and got no relief, and maybe have gone from one doctor to another, and surgical intervention may have been advised but they refused it, until—

Q.—Now, you take yourself; when a patient comes to you, a woman for treatment for some pelvic trouble, which may or may not require surgical treatment, depending upon what the condition is; how do you determine, without any knowledge of previous treatment, if any, whether or not it is a surgical case, or whether it is a medical case? *A.*—Why, by obtaining an accurate history of the case, and examining the patient.

Q.—Now then, when you say examining the patient, you mean a physical or a digital examination? *A.*—Yes, sir.

Q.—In other words, you take the patient's history, what she tells you about it, for what that may be worth— *A.*—Yes, sir.

Q.—and then you would examine the condition of her pelvic—of her pelvis, for the purpose of finding out what the underlying cause of the trouble was; isn't that true? *A.*—That is true.

Q.—And it is only in that way that you could determine whether it was a surgical case or not, isn't it, doctor? *A.*—Yes, sir.

Q.—That is the way you determine that question; and if you found, as the result of that examination, that the condition was a surgical case requiring operation, you would recommend that, and if you found it was not a surgical case, if you found what the underlying cause of the trouble was, you would treat it medicinally, isn't that right? *A.*—That is right, sir.

Q.—Yes. Now, Doctor, is it not true that a woman who has been suffering from female trouble—which is a pretty general expression, and I suppose covers a wide latitude of ailments and diseases—can such a person tell for herself whether her case is one which requires mechanical, surgical or medicinal treatment? *A.*—Not always, sometimes.

Q.—Well, now, in what proportions—in what class of cases could she tell that, do you think? *A.*—Well, she could tell that in certain cases, where the symptoms—

Mr. Walker:—Won't you speak a little louder, doctor.

The Witness:—Yes. The symptoms—she could tell by her personal experience and what she hears from others who recite exactly the same experience.

Mr. T. J. Scofield: *Q.*—Well now, I am not calling attention to any hearsay matter. I am taking a woman who is suffering from some female trouble of some kind in the pelvis, or arising from some condition in the pelvic organs; and I am asking you whether she herself would be able to say whether her condition required mechanical, surgical or medicinal treatment? *A.*—Yes, I believe she could.

Q.—You said a little while ago she could in some cases? *A.*—Yes, I—

Q.—Is that what you mean to say now, in some cases? *A.*—Yes, sir; she could in some cases.

Q.—But you don't think she could in all cases, do you, doctor? *A.*—No, I do not.

Q.—Now, in what percentage of cases do you think she would be able to determine whether or not she ought to be treated mechanically, surgically or medicinally? *A.*—In what percentage of cases?

Q.—Yes. It would be a small percentage, wouldn't it, doctor? *A.*—Yes, it would be a small percentage.

Q.—A very small percentage of cases? *A.*—Yes, sir.

Q.—The education which a physician acquires by his study at school and his experience as a practitioner enables him to say, upon an examination, as to the probability as to whether she ought to be treated surgically or mechanically, isn't that true? *A.*—In the majority of instances; yes, sir.

Q.—A woman has no such knowledge of herself or no such experience, and it is for that reason probably, and inability to diagnose her case, why she cannot tell, in the great majority of cases, whether she requires medicinal, mechanical or surgical attention; isn't that true? *A.*—That is true.

Q.—Then, as a matter of fact, if I understand your testimony aright, doctor, one of the first things, and one of the essential things which is necessary, is a diagnosis of her condition; isn't that true? *A.*—Yes—as a medical man; yes, sir.

Q.—As a medical man, that is absolutely true? *A.*—Yes, sir.

Q.—And that is the first thing you undertake to ascertain when you treat a patient, isn't it? *A.*—Yes, indeed.

Q.—And in ascertaining that, you ascertain it, as you have said, by taking a history, and then by a thorough physical examination? *A.*—That is true.

Q.—That is true, is it not? *A.*—Yes, sir.

Q.—And that is true in all cases, isn't it— *A.*—Yes, sir.

Q.—as a medical man? *A.*—Yes, sir.

The witness stated that he could not, without an examination tell whether there were congenital or acquired malformations in the vagina, tubes, uterus or ovaries, nor could he tell whether there was a displacement of the uterus or the kind of displacement without examination.

By such an examination he would know the character and extent of the displacement and whether they needed treatment. He could not tell without examination whether there were any traumatisms from childbirths, or whether there was subinvolution of the uterus. If he made an examination, he could tell whether the condition required treatment medically or whether it required surgical treatment. He could not tell without examination anything positive about inflammations, but if he made an examination he could determine the condition and the treatment. It is true also that in certain cases when he has made an examination of the pelvic organs, it is necessary to examine the secretion to learn the specific germ which is producing inflammation so that he might be in a position to treat it intelligently. It is also necessary to examine the patient whether any new growth exists. After such an examination, he is enabled to tell whether the case is one which may be treated surgically. He would not know whether or not there were conditions existing that medicines could not reach without examination.

Q.—Now then, Doctor, I will ask you whether or not, from these considerations which we have been going over in a fair discussion of what is necessary on the part of a physician, if it is not necessary, in your opinion, in a majority of cases—I say a majority—practically all the cases that are related to uterine conditions and troubles arising thereform in females, that an examination should be made by the physician— *A.*—Yes, sir —

Q.—before treatment? *A.*—as a medical man, I believe that.

Q.—Now, doctor, assume the case of a married woman thirty years of age, who has borne two children, the youngest of which is eight years old. A year after this youngest child was born, she suffered a miscarriage at three months' gestation. At this time she had considerable fever for three or four weeks, with swelling and pain in the lower abdomen, and an offensive discharge from the vagina, which, for the first week or ten days, was bloody in character. During this illness, which confined her to her bed for four weeks, she lost weight, and when she was able to sit up she was poorly and considerably emaciated. During the following few months she gradually became stronger, and was able at the end of that time to get about and attend to light housework. Since that time, though she has lived and cohabited with her husband, and has used no means of preventing it, she has never been pregnant. Her menstrual periods have always been painful, and the flow excessive. She has suffered ever since from a feeling of weight and a bearing down sensation in her pelvis. She has had constant backache and she has had frequent desires to urinate, and the act of urination is painful, giving rise to burning sensation on voiding the urine. She has had leukorrhea constantly for the past seven years; and when her bowels move she has a feeling that her private organs are going to drop out of her pelvis.

Now, Doctor, can you form an opinion on these hypotheses as to the condition which this hypothetical woman is suffering from?

Mr. Walker:—I object to it.

THE COURT:—The question at the present time is whether he can form an opinion now as to what she is suffering from. That may be answered yes or no.

Mr. Walker:—Yes.

The Witness:—Well, from the history of the case—

THE COURT:—No, no. Can you form an opinion from the history as given you by Mr. Scofield?

The Witness:—Yes, sir.

Mr. T. J. Scofield: *Q.*—What is it, doctor?

Mr. Walker:—Objected to.

THE COURT:—Well, what is the objection, Mr. Walker?

Mr. Walker:—I don't understand that this is cross-examination of anything he was asked. He has answered from a doctor's standpoint how he would ask for an examination and make it, and its benefits. This is only another method of saying he would require an examination. It does not go to the direct examination on the value of the remedies.

THE COURT:—That is true, but are they not entitled to test his—

Mr. Walker:—They may make him their own witness on that.

THE COURT:—test his general knowledge of the subject.

Mr. Walker:—I don't think that goes to the question of his knowledge or ignorance. Suppose he answered yes or no, would the jury know? I would not.

THE COURT:—Well, he says he has an opinion.

Mr. Walker:—All right.

Mr. T. J. Scofield: *Q.*—Now, what is that opinion, doctor?

THE COURT:—Go ahead.

The Witness:—Well, my opinion is that she has a subinvoluted uterus, and probably adhesions, as the result of a septic abortion.

Mr. T. J. Scofield: *Q.*—Now, I am not asking for probabilities—

THE COURT:—You asked for his opinion, and he gave it to you.

Mr. T. J. Scofield:—That is true, but I am asking him if he had an opinion as to what it was, not what it probably might have been. All right.

Q.—Can you, following the same hypothesis in mind—have you an opinion as to what is causing her sterility for the last seven years? *A.*—Well—from that history alone?

Q.—Yes. *A.*—Well, I think it is the result of an endometritis, chronic endometritis.

Q.—Now, can you say, on these hypotheses, whether this hypothetical woman is suffering from uterine prolapse or retroversion or retroflexion or salpingitis? *A.*—No, I could not say on that history.

Q.—That is, without you made an examination? Is that right? *A.*—Well, if you take it at the terminal stage there, I doubt that I could diagnose the salpingitis, even with an examination.

Q.—Can you intelligently and can you scientifically, doctor, treat such a woman as I have described by medicine taken by the mouth, without first learning the underlying cause of the trouble? *A.*—Well, it would not be absolute scientific treatment, but I think that one could get—do considerable good in that case, even without examination, from that history.

Q.—Then you say you could not tell what would be scientific treatment from that history? *A.*—Not absolute scientific treatment; no, sir.

Q.—Now, doctor, if, upon examination of this hypothetical woman, you found she had a badly lacerated perineum, and a large subinvoluted uterus was down within half an inch of the vulva, against the bladder, and that it could not be replaced on account of old inflammatory adhesions; would you say, as a medical man, that, in addition

to general directions as to regulating the bowels with laxatives, the usual advice as to antiseptic douches, sitz baths, etc.—would you expect to cure this uterine prolapse by the use of an alcoholic solution of cardnus benedictus and viburnum prunifolium, such as Mr. Walker has described to you, in a menstruum of 20 per cent. alcohol.

Mr. Walker:—I object to that, on the ground that the treatment in the book advises accompanying it with pessaries under those conditions, in addition to the treatment—and he does not put it all in.

THE COURT:—The book itself does not include the operative case, as I recall it.

Mr. Walker:—Oh, but it tells in cases of that sort that a pessary—

THE COURT:—Well, put in the pessary, Mr. Scofield.

Mr. T. J. Scofield:—Well, then, we will put in the pessary. Put the pessary right in and up against the uterus.

Mr. Walker:—Then let us find out if it is not an operative case—

Mr. T. J. Scofield:—No, no, Mr. Walker, pardon me.

Q.—Would that case be a case for a pessary, doctor, with those inflammatory adhesions in that condition? *A.*—No, it would not be a case for a pessary, but the treatment outlined there would make it easier for the patient.

Q.—How is that, doctor? *A.*—I say the treatment that you have outlined there would relieve the patient of some of her distress, but it would not cure her.

Q.—That is not the question. I ask you whether or not the Wine of Cardui would cure the prolapse? *A.*—No; of course not.

Q.—Now, doctor, if a married woman who had borne children came to you for consultation, and complained of constant backache, a feeling of fulness and weight in the pelvis, and irritation, and profuse whitish discharge from the vagina, and stated that these symptoms were all marked—more marked as she approached her monthly sickness, and that her menses were painful, and her flow excessive; will you please explain to the jury all of the pelvic conditions you know of that would cause such symptoms as I have described there? *A.*—That is, the pain at the menstrual periods and the whitish discharge from the vagina—

Q.—Yes. *A.*—and the bearing down pain, did you say?

Q.—Yes. *A.*—And pains in the back?

Q.—Yes. And excessive flow, doctor, and backache, feeling of fulness and weight in the pelvis, and irritation, and profuse whitish discharge from the vagina; and she stated that those symptoms were all more marked as she approached her menstrual period every month. Now, how many different things might that condition be referable to? Or those symptoms?

Mr. Walker:—Is this the same woman, or another case?

Mr. T. J. Scofield:—This is the same girl.

Mr. Walker:—That is, the adhesions, and the bearing down, and the—

Mr. T. J. Scofield:—No. It is not the same woman, but a different woman complaining of these conditions.

Mr. Walker:—All right.

The Witness:—Well, it might be due—it might be due to an infection—a local infection in the vagina, or in the uterus, or in the tubes. It might be due to a systemic condition, anemia, tuberculosis, diabetes, Bright's disease, heart disease.

Mr. T. J. Scofield:—It might be due to displacements, might it not, also, doctor? *A.*—Well, I am figuring that the displacements may be due to the things I have mentioned.

Q.—Yes. It might be due to polypi, might it not, and morbid growths of different kinds also? *A.*—I don't know. I have not seen polypi produce such symptoms as you have mentioned there.

Q.—So you don't know whether that produces it or not. Now then, in a case like that, in order to get at the underlying truth, to find out what the condition was, you would want to make a pretty careful examination, wouldn't you, doctor? *A.*—Yes, I would.

Q.—Now, then, doctor, take the case of a woman 45 years of age, who comes to you for treatment, and gives a history that for the past eight months she had been troubled with an offensive discharge from the vagina, occasionally tinged with blood; that the condition had been gradually getting worse and worse until now the odor from this discharge is very offensive; that she was losing weight; her skin was becoming somewhat yellow, and she had a feeling of weight and a dragging sensation in her pelvis. Would you be able to tell, without an examination, what this woman was suffering from, doctor? *A.*—How old did you say she was?

Q.—Forty-five, about. Forty-five is the question. *A.*—I could only surmise.

Q.—Well, by examination you could tell, couldn't you? *A.*—By—yes—

Q.—By a proper examination? *A.*—Microscopical examination, perhaps.

Q.—What would you surmise, doctor? *A.*—Why, I would surmise some foreign growth.

Q.—Would you have an opinion as to whether it was a malignant growth, a cancerous growth or not? *A.*—No; I would not venture such an opinion.

Q.—Well, from the symptoms indicated in the question, it might be a cancerous growth, might it not? *A.*—Well, all I can say about that is that cancer sometimes produces such symptoms.

Q.—Yes. Now, assume again, doctor, that upon examination you found that she had cancer of the neck of the womb; and assume it to be a fact that she had been taking Wine of Cardui in tablespoonful doses three or four times a day for eight months, for this condition. Would you give it as your opinion, as a medical man, that this was a proper form of treatment for this condition? Answer yes or no.

Mr. Walker:—Objected to. There is no claim anywhere that this is a proper form of treatment for cancer.

THE COURT:—He may answer.

To which ruling of the Court the plaintiff, etc., excepted.

The Witness:—Well, you mean that is the treatment alone—

Mr. T. J. Scofield:—Yes.

The Witness:—giving Wine of Cardui?

Mr. T. J. Scofield:—Yes.

The Witness: No. That is not a proper treatment.

Mr. T. J. Scofield: *Q.*—Now, doctor, if a woman came to you with a history of amenorrhea, and you learned that she was 18 years of age; that her menstrual period developed at the age of thirteen; and that she had been regular for about three years, and since that time she had only been unwell once or twice; and you found upon examination that she was profoundly anemic; and upon further examination you determined that her anemia was due to hookworm disease. If you learned further she had been taking Wine of Cardui uninterruptedly for the past three years for this condition, amenorrhea, would you give it as your opinion, as a medical man, that the use of Wine of Cardui was a proper and a scientific treatment for the cure of her anemia? *A.*—No.

Q.—Or amenorrhea either? What is your answer? *A.*—My answer is that you might get some symptomatic relief for the amenorrhea, but it would not cure the hookworm.

Q.—I am asking you whether or not it would cure the amenorrhea and the anemia, that treatment, under those circumstances? *A.*—Well, amenorrhea is a symptom.

Q.—I understand, but— *A.*—You relieve symptoms; you don't cure them.

Q.—Yes. *A.*—And the cause of that symptom, I take it, leads back to the anemia, and the anemia leads back to the hookworm.

Q.—And this treatment would not cure the hookworm, would it? *A.*—No, sir; it would not.

Q.—Suppose you take the same hypothetical question I have given you, and instead of the words "hookworm," suppose you put in there "malaria," that was causing the amenorrhea—or the anemia—would Wine of Cardui be proper treatment for that? *A.*—It would be a harmless tonic, but it would not be proper treatment.

Q.—I am not asking that. Would it be a proper and scientific treatment for amenorrhea? *A.*—It would not be a specific treatment; no, sir.

Q.—Suppose it is syphilis, instead of hookworm or malaria; would Wine of Cardui be a specific and proper treatment for that? *A.*—It would not be a specific treatment; no, sir.

Q.—Suppose, instead of being due to hookworm or malaria or syphilis—suppose the condition was due to tuberculosis; would Wine of Cardui be a proper and a specific treatment for tuberculosis? *A.*—Well, there is no recognized specific treatment for tuberculosis.

Q.—Just answer yes or no. Would it or would it not? *A.*—I cannot say yes or no. I must have some latitude.

Q.—All right. *A.*—We give tonics in tuberculosis; and a tonic may be indicated here, and, of course, we direct our efforts to the causal factors.

Q.—Well, would the Wine of Cardui cure the tuberculosis? *A.*—No, it would not.

Q.—Now, Doctor, when you take care of a pregnant woman, with a view to attending her in confinement, is it your custom to make urinalyses during the last few months of her pregnancy? *A.*—I make it every month; and the last few months every two weeks.

Q.—Why is it you do that, doctor? *A.*—Because I can gage of the functionating powers of the patient's kidneys by that test.

Q.—Suppose, upon such examination from time to time, you would find that a good deal of albuminuria were present in the urine; would you consider there was any danger of the development of eclampsia? *A.*—Well, it would depend, it would all depend on what was causing the albuminuria.

Q.—Well, suppose she had Bright's disease, or nephritis, then would you say there would be any danger of eclampsia? *A.*—There would be a possibility of eclampsia; yes, sir.

Q.—Now, under such circumstances, doctor, would you think it good treatment to give your patient a medicine containing the equivalent of 96 drops of whisky three or four times a day, in such a condition? *A.*—I don't think 96—I do not think the equivalent of 96 drops of whisky would do any particular harm.

Q.—You think it would be good treatment, do you, doctor? *A.*—Not good treatment; no, sir.

Q.—It would not be good treatment? *A.*—I do not say that it would not be good treatment; no, to give the equivalent of 96 drops of whisky.

Q.—Doctor, are you the same Dr. von Zelinski who was employed by the Jiroch Medicine Company, or its attorneys, to testify in a criminal proceeding here, or in a case here before Judge Landig, a few months ago? *A.*—No, I have never—

Q.—You never heard anything of the kind? *A.*—No, sir.

Q.—Doctor, are you, or are you not, connected with the concern known as Chicago School of Refraction? *A.*—I do some teaching for them; yes, sir.

Q.—Reading from the catalog, which is copyrighted 1916, by the Chicago School of Refraction, I find that Dr. W. F. von Zelinski is one of the board of directors of that school. You are the doctor, are you? *A.*—That refers to me; yes, sir.

Q.—That refers to you. Reading also from the catalog, I find that Walter Franz von Zelinski, M.D., Ph.G., Sc.B., Professor of Anatomy, Histology and Physiology of the Eye. Does that refer to you, doctor? *A.*—Yes, sir; it does.

Q.—I notice, as I say, in that catalog, that you have the letters Sc.B. after your name. *A.*—Yes, sir.

Q.—And that represents what? *A.*—Bachelor of Science; Scientiae Baccalaureus.

Q.—From what school did you obtain the Bachelor of Science degree? A.—From St. Ignatius College.

Q.—When? A.—1910.

Q.—Is it not true, doctor, that the Chicago School of Refraction is a concern which teaches the fitting of spectacles, on the mail order plan? A.—I do not know about that. I understand that they have an extension course. I have prepared some lectures on anatomy for them.

Q.—Are there any students at all in actual attendance on a residence course given by the Chicago School of Refraction? A.—Well, I will answer that—

Mr. Walker:—I object to it.

THE COURT:—What difference does that make?

The Witness:—I lecture to thirty to thirty-five students every Wednesday night.

Mr. T. J. Scofield:—Now, then, doctor, finally, I want to ask you whether or not—are you connected with the Chicago College of Medicine and Surgery? A.—No, sir.

Q.—Well, you know Dr. Funck there, who is professor of materia medica, don't you? A.—Yes, sir; I know him.

Q.—Well, do you agree with Dr. Funck, that a solution which contains the equivalent of 96 drops of whisky—

Mr. Walker:—I object to it now in that form.

Mr. T. J. Scofield:—What is it?

Mr. Walker:—I object to the question now in the form in which you put it, "Do you agree"—

THE COURT:—What difference does it make, Mr. Walker, whether he puts it in that form, or whether he states what Dr. Funck says, and then asks, "Is that your opinion also?"

Mr. Walker:—It really does not make any difference, if the form is good—

Mr. T. J. Scofield: Q.—(Continuing)—as to whether or not the use of a medicinal solution containing the equivalent of 96 drops of whisky to each dose would be a scientific and specific remedy with a curative effect in the case of gonorrheal vaginitis?

Mr. Walker:—I object.

The Witness:—What is in the solution?

Mr. Walker:—Go ahead.

Mr. T. J. Scofield: Q.—The solution concerning which we have been talking, doctor. A.—The solution of which we have been talking?

Q.—Yes, the Wine of Cardui solution. A.—And you want to know if it has a specific effect?

Q.—Well, I am asking you if it is a scientific and specific remedy for gonorrheal vaginitis. A.—You mean has a destructive effect on the gonococcus?

Q.—You are a physician; don't you understand what a specific and scientific remedy means? A.—Yes, but my understanding of a specific may differ from yours—my understanding.

Q.—Well, you answer it as you understand it. Is it a specific and a scientific remedy for gonorrheal vaginitis? A.—Why, no.

Mr. T. J. Scofield:—That is all.

Mr. Walker:—That is not all of it—with a curative effect, doctor?

The Witness:—Oh, it may have an indirect curative effect. It is not a specific.

THE COURT:—Any redirect examination?

Mr. Walker:—Yes.

REDIRECT EXAMINATION BY MR. WALKER

Q.—Is amenorrhea ever accompanied by typhoid fever? A.—Yes, sir.

Q.—Can you cure typhoid fever with Wine of Cardui? A.—Not to my knowledge.

Q.—Are there sometimes cases with amenorrhea that also have diarrhea? A.—Well, more likely they would have metrorrhagia.

Q.—Could you cure the diarrhea with Wine of Cardui? A.—I do not think so. I do not know.

Q.—Suppose they had cholera; might they have amenorrhea with cholera? A.—Yes, sir.

Q.—Do you think you could cure the cholera with Wine of Cardui? A.—No; I don't.

Q.—Or if they had a toothache, do you think you could cure it with Wine of Cardui, if there was an accompanying amenorrhea at the same time? A.—I do not know, I don't think so.

Q.—Take that first case. I have forgotten how many adhesions there were in that first illustration; at the latter end, if the womb was—I do not remember whether it was half out or all out or what part of it was out. Do you think the woman there would know that her womb was down and out? A.—I think she would.

Q.—Do you think she would have any difficulty in diagnosing it then? A.—She could diagnose the fact that it was out.

Q.—Yes. Now, doctor, tell me some cases, if you know of any, where a woman can tell what is the matter with her when she has some genital disturbance or difficulty? A.—Well, a woman can describe the symptoms, although she might not be able to name the disease.

Q.—Yes. A.—She can tell that her womb is protruding out of the vagina. She can tell whether she has any distress on urinating, or—

Q.—You think she might know that? A.—Yes.

Q.—Yes. A.—And she can tell if she has backache and bearing down pain, or if she is constipated, or if she feels weak and indisposed, and if she has headache.

THE COURT:—She can tell anything that she has intelligence enough to make a note of?

The Witness:—Yes, sir.

Mr. Walker:—Wait a minute, I am not through. Wait a minute. I am requested to ask another question.

Q.—Doctor, in your opinion, would the 46 drops of alcohol in this medicine, taken as prescribed, have any detrimental effect on a woman who is pregnant, even if she had nephritis? A.—Not to my belief.

RECROSS-EXAMINATION BY MR. T. J. SCOFIELD

Q.—Doctor, typhoid fever is a fever which runs some two or three weeks, or four, generally, is it not? A.—Yes, but—

Q.—But amenorrhea, as I understand it, is constant—is a chronic condition and runs for months and months? A.—No, I do not understand it as such.

Q.—You don't? A.—No, not for months and months.

Q.—You would not call it amenorrhea, if it did not continue—the absence of menstruation continue right along? A.—You see, we have various kinds of amenorrhea. We have a physiological amenorrhea in pregnancy.

Q.—Yes, but— A.—And we may have the change of life—

Q.—I am not referring to any physiological amenorrhea like pregnancy or after the menopause. I am talking about the case of a girl—the amenorrhea that is produced by typhoid fever, would be a matter of one period at least, wouldn't it? A.—At least; yes, sir.

Q.—And no more, possibly? A.—And no more, possibly.

Q.—So far as the diarrhea and colic and those things are concerned—

Mr. Walker:—Cholera.

Mr. T. J. Scofield: Q.—Cholera. Those are transient conditions, are they not? A.—No, I would not say that cholera is a transient condition.

Q.—What would you say they were? A.—Cholera may be a fatal disease.

Q.—I am referring to the length of time they last, doctor, if they would produce amenorrhea, as to how long the amenorrhea would be supposed to result, from those conditions? A.—It would all depend upon what effect the cholera had upon the general system.

Q.—Yes. A.—It may have lowered the vitality, and the disease may have been so severe that there may be amenorrhea over a longer period of time.

Q.—What do you mean by that, a longer period of time? A.—It may last six or seven or eight months.

Q.—It acts very much like malaria, doesn't it? A.—Sometimes.

Mr. T. J. Scofield:—That is all.

Mr. Walker:—One question.

Q.—Would it be any easier to cure typhoid with this medicine because it ran three weeks, than it would consumption, because it ran three years? A.—Would it be any more easy?

Q.—Yes—Wine of Cardui. A.—I do not know as you can cure either one with that.

Q.—Does the time limit on either disease make any difference to that fact? A.—Not a bit.

Whereupon an adjournment was taken until 2 o'clock p. m. of the same day, May 16, 1916.

May 16, 1916, Afternoon

The court met pursuant to adjournment. Depositions were read.

Whereupon the further hearing of said case was adjourned until the following day, May 17, 1916, at 10:30 o'clock, a. m.

May 17, 1916, Morning

TESTIMONY OF DR. GEORGE C. AMERSON

Dr. G. C. Amerson was called as a witness for the plaintiff in rebuttal.

DIRECT EXAMINATION BY MR. WALKER

Dr. George C. Amerson testified that he is a surgeon. He graduated from the Hahnemann Medical College of Chicago and College of Physicians and Surgeons of the University of Illinois. He is ex-intern of the Cook County Hospital and was attending surgeon on the Cook County Hospital staff for eight years. He was on the staff of the Frances E. Willard Hospital for seven years. He is at present attending surgeon of the Garfield Park Hospital and the West Side Hospital of Chicago. He is professor of surgery in the Chicago College of Medicine and Surgery, and in the Illinois Post Graduate School of Medicine.

He testified that he is a member of the Chicago Medical Society, the Illinois State Society, the American Medical Association, the Tri-State Medical Society, the National Association of Military Surgeons; that he is captain surgeon of the Illinois National Guard. He has devoted himself exclusively to surgery for five or six years. He has treated all phases of diseases peculiar to women, covering thousands of cases, from puberty to the menopause.

Approximately 50 per cent. of the cases of women's diseases before he specialized in surgery were cases where the conditions were not surgical. Most of the cases which he sees now are referred cases, treated by medicine before they come to him. He stated that practically all girls suffer from pain and other symptoms at puberty, and that medicines taken by mouth are indicated at this time. He stated that women at the menopause usually suffer with symptoms directly due to the menopause and that at such times, uterine tonics and

sedatives would be indicated as well as general tonics. He stated that, in a pregnant woman not suffering from any symptoms except the ordinary symptoms of pregnancy, uterine tonics and general tonics would be indicated. He stated that at the menstrual period, during pregnancy there are symptoms such as cramps and pains with some menstrual flow and the same medicines are indicated at this time.

Q.—In those cases, doctor, where you prescribed a uterine tonic, will you tell the jury how the tonic acts, how it can act, and have any effect at all? *A.*—Well, we have what are known as general and special tonics, tonics that seem to have a seat of selection or preference for their localized actions, like uterine tonics, and we have hepatic tonics for the liver, and we have cardiac tonics for the heart and so forth, and those special tonics are picked up of course by the blood stream, but seem to show a selective action on the special organs like the uterus, and increase the tone.

Q.—A little louder. *A.*—Increase the tone and act as a tonic to that particular organ. That would be a special tonic.

Q.—May a medicine be a tonic and at the same time a sedative? *A.*—Yes, sir.

Q.—What do you call a medicine in your nomenclature that in a short time or over a time contracts spasmodically or acts upon the uterus to contract it, what do you call such a medicine as that? *A.*—It would probably be a stimulant.

Q.—Do you distinguish in your practice between a stimulant and a tonic? *A.*—Yes, sir.

The witness stated that in cases of threatened abortion, the treatment is rest, sedative treatment and uterine tonic, to stop the uterine expulsive action of the uterus, and he stated that during pregnancy a tonic treatment is given which relieves childbirth and makes it more normal.

Dr. Amerson stated that he is familiar with viburnum prunifolium. He has been using it for the last fourteen years and considers that it has therapeutic value. He is familiar from his reading and contact with doctors with carduus benedictus, although he has never used it in his practice. He believes carduus benedictus is a valuable therapeutic drug in most cases where there are female diseases because it belongs to a group or class of drugs which belong to that class of diseases although he himself has never used it.

Q.—Doctor, suppose a woman had tuberculosis, where it was not in any of the genitalia of the woman, where it was not in the womb or ovaries, or located in the pelvis. Could you tell by a mere digital examination through the vagina that she had tuberculosis? *A.*—No, sir.

Q.—Or that she had malaria? *A.*—No, sir.

Q.—Or that she had croup? *A.*—No, sir.

Q.—State whether or not, doctor, in your opinion, a drug might be valuable, if a woman was suffering with amenorrhea or dysmenorrhea at the same time that she was suffering with consumption, in easing the distressing conditions that arose from the genital trouble independent of the consumption, or the other trouble? *A.*—I believe it would.

Q.—Would a tonic be helpful in the general relief of the woman, independent of the specific disease of tuberculosis? *A.*—Yes, sir.

Q.—Or malaria, or whatever that disease might be? *A.*—Yes, sir. It is part of the treatment.

Q.—In your opinion, is there any drug or tonic that will cure tuberculosis? *A.*—No, sir.

Dr. Amerson stated that he has never treated hookworm. He stated that practically all drugs used by physicians in liquid form contain alcohol as a solvent. He considers the alcohol negligible in prescribing the drugs. It has no deleterious effect. He does not think the prescribing of medicine which contains 20 per cent. of alcohol at puberty would tend to give the girl an alcoholic habit or tend to develop the passions. He defined vicarious menstruation as a periodical establishment of a hemorrhage from some orifice other than the uterus at the time of the expected menstruation. In such cases general tonics, uterine tonics and pelvic tonics would be indicated; viburnum prunifolium would be indicated. It would also be indicated in amenorrhea, dysmenorrhea, menorrhagia and metrorrhagia.

The witness stated that he has done every type of operation there is on the female pelvis. He stated that there are malpositions of the uterus that are not surgical cases and they occur often where the patient is unconscious of them. He would not expect the patient to have any information about this condition if there were no symptoms. He stated that there are cases of prolapse that are best treated medically. He would not consider the alcohol in Wine of Cardui as deleterious to the people taking it in the prescribed doses, either at puberty, pregnancy or the menopause. He would not expect it to produce Bright's Disease at the time of pregnancy because of its alcoholic content.

Q.—Will you tell the jury why you think the alcohol would be negligible in those cases, with the use of this drug in the proportions named? *A.*—Well, it is in solution. It is diluted, and is acting as the vehicle for drugs. The amount of alcohol would be considered negligible, because it would very rapidly oxidize in the stomach and probably stimulate to a certain extent, or promote the absorption of the drug that it was acting as vehicle for.

Q.—Do you limit the oxidization of the drug to the stomach? You said stomach. *A.*—Not entirely; no, sir.

Q.—That would be one of the processes? *A.*—One of the processes, yes, sir.

Q.—Now, doctor, are you at all acquainted with the synergistic action of drugs, and what is meant by that term? *A.*—Yes, sir.

Q.—In your practice, do you ever use viburnum prunifolium, in combination with other drugs to accomplish the purpose that you desire in diseases of women? *A.*—Yes, sir.

Q.—From what you know of carduus benedictus, and of viburnum prunifolium, state whether or not, in your opinion, a medicine containing the two drugs would be at all injured by the fact that the two drugs were in combination? *A.*—I think not; it might be benefited.

Q.—Then you find no criticism of the use of the drugs together? *A.*—No, sir.

Q.—Doctor, state whether or not, in your opinion, the trying out of a drug upon an animal, such as a dog or cat, without being able to note the effect of the drug, either on the respiration or circulation of the animal, is a proof that the drug would be nonpotent and inefficient if given to a human being in sickness.

Mr. T. J. Scofield:—Wait a moment, I do not think Dr. Amerson has qualified as a pharmacologist.

THE COURT:—No, he has not.

Mr. Walker:—I do not think he has to.

THE COURT:—He has qualified as a physician, and he may give his opinion for what it is worth.

Mr. Walker:—I am speaking as a doctor.

To which ruling of the Court the defendants, etc., excepted.

A.—It would be valueless.

Mr. Walker: *Q.*—You think such a test would be valueless? *A.*—Yes, sir.

Q.—Do you, doctor, make a distinction between a pharmacological test on a medicine and a clinical test? *A.*—Yes, sir.

Q.—How many medicines within your knowledge, if you can tell, are used without reference to their pharmacological findings, but as a result of the clinical information? *A.*—Well, there are thousands of drugs that are recommended for use only a few of which have ever been proven pharmacologically.

Q.—Are they in use? *A.*—Yes, sir.

Q.—Many of them? *A.*—Yes, sir.

There was then read to Dr. Amerson, an abstract of the test performed by Dr. J. Clarence Webster. He stated that it would decidedly not be a proof that the medicine was inefficient if given to a human being by way of the mouth for any disease that the woman might have, because the action of the drug locally does not disprove that it has medicinal value. The fact that the uterus blanched after pituitrin does not indicate to him that the previous drug which did not cause this action had no action on the uterus.

He stated that inflammation such as endometritis might be aided by medical methods. Where there are adhesions, they do not necessarily require surgical operation. His opinion is that Wine of Cardui would be a proper medicine under these conditions. The alcohol would not be injurious nor would it increase the inflammation. He usually found in amenorrhea, metrorrhagia, etc., the general system required toning up.

The witness stated that he had read the Home Treatment for Women for 1913.

Q.—Have you read that chapter of the book also, on vaginitis? *A.*—Yes, sir.

Q.—I call your attention, for the purposes of this question, under the head of "Vaginitis," to a sentence, "the most frequent cause of vaginitis is gonorrhea, brought on by infection, sexual excess or unhealthy discharge from the womb, ovaries, tubes or bladder." Now, is gonorrhea itself brought on by sexual excess, where there is not the germ of gonorrhea? *A.*—No, sir.

Q.—Is it brought on by an unhealthy discharge from the womb, ovaries, tubes or bladder, where there is not the germ present of gonorrhea? *A.*—No, sir.

Q.—You read this sentence yourself, did you? *A.*—Yes, sir.

Q.—Now take a case—is vaginitis brought on by gonorrhea? *A.*—Yes, sir.

Q.—State whether or not, in your opinion, doctor, there is a drug or a medicine that will cure, anywhere, any kind of medicine, that will cure by killing the microbe itself, the gonorrheal microbe? *A.*—No, sir.

Q.—Then how is it treated, and how does medicine act, if at all, in reference to that germ? *A.*—Well, the treatment consists of local treatment—

Q.—Well, tell us what you mean by local treatment? *A.*—Local treatment would be tamponing or medicated douches, or possibly even stronger solutions than we usually use, to inhibit possibly the bacteriological activity of the superficial organisms; and the general treatment would be tonics to increase the resistance and efficiency of the tissue involved, thereby increasing a natural power in the tissue itself

to inhibit or restrict or destroy the bacterial activity. There is no medicine—

Q.—Do you—go ahead, doctor. *A.*—that I know, locally, that will by the natural resistance of the tissue; and the cure is brought about by the natural resistance of the tissue that is invaded overcoming the bacterial activity.

Q.—And is medicine indicated, doctor, to enforce and assist the tissues, through the blood supply, to perform that function and eradicate the germ? *A.*—Any medicine that would increase the tone or the resistance of the tissue would be valuable in the treatment of the infection.

Q.—Now, doctor, would a medicine such as Wine of Cardui, that I have spoken about, be deleterious to the blood supply or the tissues of the organs, and would it increase the ability of the gonococci germ to propagate itself, by reason of the alcoholic content in such medicine? *A.*—No, sir.

Dr. Amerson stated that treatment described in this book for falling of the womb, amenorrhea, metrorrhagia, etc., not including the medicine is a practical and proper treatment. Assuming that a tonic is indicated, Wine of Cardui would be such a tonic. He stated that there was a connection through the sympathetic nervous system between the breasts and the female reproductive organs. The breasts are valuable in making a diagnosis of the diseases of the pelvic organs. If the woman is in a run down condition, he stated you would expect drooping or falling breasts. Anything that would improve the general health and development of a woman would naturally improve any part of her and thus aid in restoring the condition of the breasts. He has never prescribed Wine of Cardui to his patients. He stated that Wine of Cardui would be indicated as a general tonic during parturition.

Q.—I don't suppose, as a physician, you prescribe proprietary medicines in your practice at all? *A.*—Not very often.

Q.—Have you ever used Hayden's Viburnum? *A.*—Yes, sir.

Q.—Have you used any of the Parke-Davis preparations of drugs? *A.*—Yes, some of them; not very many of them.

Q.—And in what cases have you used Hayden's Viburnum? *A.*—Oh, in cases where viburnum would be indicated.

Q.—Well, is that in reference to diseases of women? *A.*—Diseases of women.

Q.—Do you know how much alcohol is in that, doctor? *A.*—I don't exactly; I believe about 40 per cent. of alcohol.

The Court:—How much did you say?

The Witness:—Forty per cent.

The witness described various conditions which might produce sterility in women. In such conditions, uterine tonics would be indicated.

The witness is familiar with leukorrhea and its treatment. Hygienic and local treatment with uterine tonics would be indicated.

CROSS-EXAMINATION BY MR. SCOFIELD

Dr. Amerson testified that after his graduation from the Chicago Homeopathic School in 1902, he became an intern in the Cook County Hospital. He was there as a homeopathic intern for 18 months. During the time he was intern he took the senior course at the College of Physicians and Surgeons, extending over two years. While an intern he did not practice according to the homeopathic methods strictly but with leeway. He used drugs singly and in combination. He used them in combination homeopathically. He says the teaching of homeopathy is for individual prescribing, but the practice of it is in combination. He graduated from the College of Physicians and Surgeons in 1904 and went immediately into practice. In the last five or six years, he has been doing surgery entirely. Shortly after he graduated from the Cook County Hospital he was appointed associate surgeon on the staff and he spent all his spare time in the Cook County Hospital in this work. His work was surgery. He became attending surgeon in 1906. When he saw cases, he determined whether they were to be treated surgically or medically by a general examination to find out what the cause of the trouble was.

This applies practically to all conditions of the female pelvic organs. He testified that he could not tell what was the cause of the condition until he made an examination, nor could he tell the treatment until he had made an examination.

Q.—In other words, you would not consider it a safe proposition to guess at a condition when it was possible for you to ascertain it; that is right, is it not? *A.*—I would not consider it—

Q.—What is that? *A.*—I would not consider it a guess—I would not want to guess.

Q.—Well, you would not want to let the patient decide for herself either, what the condition was, would you? *A.*—No, sir.

The witness testified that the woman could not make a diagnosis of her condition. She could tell whether she had pain. Sometimes the physician cannot make a diagnosis by his examination. The physicians do the best they can.

Dr. Amerson testified that sometimes a woman would state that she had leukorrhea or whites, which is a symptom. He named some of the conditions which may produce leukorrhea. It is possible for the physician by the history and general examination and examination of the discharge—which he invariably makes—to tell the cause of the condition and the treatment. The treatment of ordinary leukorrhea and gonorrhea which he gives is usually along the same lines although one might add serologic treatment. It would not make any difference whether the condition was gonorrheal or otherwise as to what medicines are given by mouth. It would not make any difference in the douches although the latter might be more frequent and the stringency increased, if the case was one of gonorrhea.

Q.—Now, what does the astringent do? What is the effect of the astringent, some astringent generally, in the douche? *A.*—It contracts the tissues.

Q.—Would you consider it good treatment to contract and lock up these tissues, with the gonococci there?— *A.*—It is used right along.

Q.—in the mucous membrane? *A.*—It is used right along.

Q.—I am not asking you that. I am asking you if you consider that it would be good treatment for you to give a douche that was an astringent which, as you say, would be for the purpose of shrinking up, and which, in its effect, would lock up the gonococci in the mucous membrane, with the possibility of its working its way up into the bladder, or into the fallopian tubes and ovaries? *A.*—The gonorrheal organisms are already implanted in the cells and the tissues, and your astringent would contract the vessels, and possibly have a disposition to localize it, rather than disseminate it through the tissue.

Q.—Then you put it upon the basis that that might result? *A.*—Yes, sir.

Q.—You say possibly it might. What do you mean by that? *A.*—I said also that I might possibly use an astringent. I don't mean by that that I use an astringent all the time, or that I would cauterize them all the time.

The witness stated that such a treatment was surgical. He stated that he did find cases of pyosalpinx which were due to gonorrhea and some authorities stated that practically all cases of pyosalpinx are due to gonorrhea.

He described the way the gonococcus reaches the fallopian tubes by extension up from the vagina. It may go through the urethra to the bladder and produce cystitis. The treatment of vaginitis, assuming that it was not already beyond the cervix, would be local with perhaps some general tonic. He sometimes gives medicated douches containing boric acid and argyrol or silver solution for the purpose of inhibiting the germ which he does not believe they do. When argyrol and nitrate of silver are used in the eye of an infant, they are not put there to kill the germ but primarily to irrigate, and secondarily, he believes, it inhibits the gonococcus.

Q.—In what way does it inhibit the action? *A.*—By its astringent action, I suppose.

Q.—It kills it, doesn't it, doctor? *A.*—You can say kill it, if you want to.

Q.—What? *A.*—You can say kill it, if you want.

Q.—That is what it does— *A.*—It kills it for all practical purposes.

Q.—Don't you know, doctor, the state laws require you to do it for that very purpose? *A.*—Recently I believe it does—it is compulsory.

Q.—And the reason, and the object of it is for the destruction of that germ; isn't that true?

Mr. Walker:—That is objected to. The fact that the state law requires it, we don't object to, but that the state law requires it for that purpose, we do object to.

The Court:—Objection sustained.

To which ruling of the Court the defendants, etc., excepted.

Mr. T. J. Scofield: *Q.*—I will ask you, if you don't know, as a matter of fact, that is the purpose for which you give that drug, under those circumstances, to babies?

Mr. Walker:—That is another matter. All right. Answer that.

The Witness:—To kill the germ?

Mr. T. J. Scofield: *Q.*—Yes. *A.*—Yes, you can say kill, if you want. A better word would be "inhibit."

Q.—All right. So you make a distinction between inhibit and kill? *A.*—Yes, sir; because we have lots of organisms in our mouth, throat and nose that are not active.

The witness stated that he ordinarily does not give the same treatment in acute gonorrhea in women that he gives for ordinary catarrh of the womb. He gives directions for preventing transmission of the disease to others.

Whereupon an adjournment was taken until 2 o'clock p. m. of the same day, May 17, 1916.

(To be continued)

Correspondence

Endocrinopathic Inheritance

To the Editor:—In the letter of Dr. Irving F. Stein (THE JOURNAL, June 3, 1916, p. 1811), in which he gives a heredity chart of a family through three generations, one original parent of which had diabetes, an apparent exception to transmission of endocrinopathic characteristics is presented. In analyzing this chart, we first note that only an absence of a normal metabolic factor (diabetes) is presented—and no absence of a normal growth factor, in the parents. In the analysis of my paper (THE JOURNAL, May 6, 1916, p. 1438), I drew a conclusion that metabolic disturbances were seemingly recessive in the male and dominant in the female. On this basis, only the families of the daughters of the individual No. 3 of Dr. Stein's chart could be considered in the endocrinopathic inheritance. The number of such offspring is shown by the chart to be seven. Of these seven individuals, four are males and therefore apparently immune. Of the three females (who are probably still quite young) *one already has an endocrine disturbance*—obesity. That is, 33⅓ per cent.! Furthermore, while growth abnormalities are easily distinguishable, yet metabolic disturbances (diabetes, hypoglycemia and hyperglycemia, calcium and phosphorus disturbances, etc.) can frequently only be determined by careful laboratory analyses. Unless this has been done by Dr. Stein, it would be unfair to reject any individuals merely on normal appearances. I do not know what criteria Dr. Stein uses to distinguish metabolic disturbances, but I would be much interested to know whether vagotonia, muscular fatigability, tachycardia, bradycardia, pigmented skin, abnormalities of hairy growth, and similar conditions were among them. I should also like much to know just what Dr. Stein means by "simple goiter."

WALTER TIMME, M.D., New York.

Treatment of the Neuropathic Child

To the Editor:—In THE JOURNAL, June 3, 1916, p. 1816, in the discussion of papers read before the Medical Society of the State of New York at Saratoga Springs, I am quoted as saying:

> When the mother brings such a child to me complaining of night terrors, bed wetting and nervous symptoms, I usually prescribe bromids and Fowler's solution and let it go at that.

The reporter either misunderstood me, or else did not listen to what I had to say. If you will read the rest of the discussion as published you will see that it is inconsistent with the statement quoted above. In fact, it was the crux of my discussion that physicians are apt to minimize the importance of studying the nervous child from every point of view possible, including organic disease, heredity, environment and economics. I uttered a warning that when a child, as described above, is brought to a physician, he should not be satisfied with a diagnosis of "nervousness" and send it away with a prescription for bromids or Fowler's solution, and feel that he has discharged his duty to his patient and to society at large, because many of these children later in life fill the asylum, homes for epileptics and reformatories.

MOSES KESCHNER, M.D., New York.

Infant Mortality Rate of Passaic, N. J.

To the Editor:—In the Current Comment on "The Baby's Chance for Life" (THE JOURNAL, May 27, 1916, p. 1707) concerning the infant mortality rate in 144 cities based on figures supplied by the New York Milk Committee, it was stated that Passaic, with a rate of 193.5, had the highest rate of all the reporting cities. This statement started an uproar here, and good will no doubt be the result.

As a matter of fact Passaic does not deserve this bad eminence. Investigation shows that a very material error was made in compiling the vital statistics for the New York Milk Committee in this city, and that the true infant mortality rate for Passaic in 1915 was not 193.5 but 136.1. Under separate cover are sent copies of the *Daily News* giving all the evidence in the case.

As the mistake was made here, we shall have no cause for complaint if THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION will now aid us in correcting the false report which by now has been read in every part of the United States.

The state department of health, at Trenton, records our infant mortality rate for 1915 as 136.1, and a checking up of the figures here shows this to be correct. Our vital statistics are kept separate from the board of health, and it was in answering the New York Milk Committee's questions that the error was made.

We realize that Passaic is not perfect, but we do feel that we should be saved from the consequences of this blunder.

G. M. HARTT, Passaic, N. J.
Editor, Passaic *Daily News.*

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

IS AROMATIC SPIRITS OF AMMONIA A DESIRABLE PREPARATION?

To the Editor:—The dosage of aromatic spirits of ammonia is given as 30 minims often repeated; that apparently means about 20 drops of alcohol, with a little over 1 grain of ammonium carbonate, and a little less than 3 drops of aqua ammoniae.

Where the effect of ammonia or its carbonate is wanted, would it not seem better to prescribe aqueous solutions, those who still find alcohol useful in medicine prescribing it as whisky or otherwise? In other words, does this preparation still deserve a place in the pharmacopeia?

W. R. T., M.D.

ANSWER.—Aromatic spirits of ammonia is an old-fashioned complex mixture; its reputation has little scientific basis. Whatever effect it may have is probably psychic, to a considerable degree, at least. Such effect might be expected from the irritation of the nasal mucosa by the ammonia and the flavor and odor of the lemon, lavender and nutmeg oils. The physical effect, if any, is probably due to the alcohol, though the ammonium carbonate and combined ammonia may have some restorative action by their irritation of the gastric mucosa or by their neutralization of nauseating acids in the stomach.

Our correspondent's point is well taken. When ammonium carbonate is to be given, it is better to give it in aqueous solution. When alcohol effects are desired, whisky is a better medium for administration.

INTRAVENOUS PRODUCTS COMPANY—TREATMENT OF SHOCK

To the Editor:—1. Please give me the status of the Intravenous Products Company of Denver. They are claiming great results. Is their treatment safe, sane and trustworthy?

2. Can a better treatment of "shock" be given than those of our textbooks?

PRACTITIONER.

ANSWER.—1. THE JOURNAL, March 25, 1916, p. 978, discussed several of the preparations made by the Intravenous Products Company.

2. Up-to-date textbooks, by reliable authors, are presumed to give the best treatment. For treatment of shock, see Therapeutics, THE JOURNAL, May 6, 1916, p. 1464.

PROPORTION OF PHYSICIANS TO POPULATION

To the Editor:—Please let me know in what number of THE JOURNAL there appeared an article regarding the proportion of physicians to population.

A. W. VALENTINE, M.D., Washington, D. C.

ANSWER:—In Queries and Minor Notes, THE JOURNAL, Feb. 1, 1913, p. 388, statistics are given as taken from the census of 1910 and the third edition of the American Medical Directory. In THE JOURNAL, May 27, 1916, p. 1736, statistics appear as taken from the fifth edition of the American Medical Directory, and the 1915 estimate of the U. S. Census Bureau.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chairman, Dr. W. H. Sanders, Montgomery.

ALASKA: Juneau, July 5. Sec., Dr. H. C. De Vighne, Juneau.

ARIZONA: Phoenix, July 5-6. Sec., Dr. John Wix Thomas, 306 Goodrich Building, Phoenix.

COLORADO: Denver, July 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Regular, New Haven, July 11-12. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven; Homeopathic, New Haven, July 11, Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven; Eclectic, New Haven, July 11, Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

DISTRICT OF COLUMBIA: Washington, July 11-13. Sec., Dr. Edgar P. Copeland, The Rockingham.

INDIANA: Indianapolis, July 11-13. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

MAINE: Augusta, July 6-7. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, July 11-13. Sec., Dr. Walter P. Bowers, 1 Beacon St., Boston.

NEW MEXICO: Santa Fé, July 10. Sec., Dr. W. E. Kaser, East Las Vegas.

NORTH DAKOTA: Grand Forks, July 4. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, July 11. Sec., Dr. R. V. Smith, 502 Daniel Bldg., Tulsa.

OREGON: Portland, July 5-7. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 11-13. Sec., Mr. Nathan C. Schaeffer, Department of Public Instruction, Harrisburg.

RHODE ISLAND: Providence, July 6-7. Sec., Dr. Gardner T. Swarts, Room 313 State House, Providence.

SOUTH DAKOTA: Deadwood, July 11. Sec., Dr. Park B. Jenkins, Wauhay.

UTAH: Salt Lake City, July 3. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, July 11-13. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Tacoma, July 4. Sec., Dr. C. N. Suttner, Walla Walla.

WEST VIRGINIA: Charleston, July 11. Dr. S. L. Jepson, Charleston.

Graduate Medical Classes in North Carolina

According to a letter from Dr. W. S. Rankin, secretary of the North Carolina State Board of Health, and to later news reports, a novel scheme for bringing graduate medical instruction where it is more readily accessible to physicians has been established in North Carolina. Under the auspices of the state board of health and the state university, since June 5, classes have been held in six cities of North Carolina, to be continued for seventeen weeks. The classes in each city have at present from eight to fifteen members. The course is opened each week at 11 a. m., with a lecture covering one hour and a clinic of two hours. The instructor is in Raleigh on Monday, and in Weldon, Tarboro, Wilson, Goldsboro and Selma on the other five days of the week, respectively. The course deals with diseases of children, and the instructor is Dr. Louis Webb Hill of Boston. Another class has since been organized in the western part of the state, the instructor being Dr. Jesse R. Gerstley, a Chicago physician, who likewise gives lectures and clinics in children's diseases.

Each physician enrolled in these classes, after signing an application blank, deposited $20 and agreed to pay a further sum should additional funds be necessary to cover the expenses of the course. It was understood that the University of North Carolina was to assume all financial obligations and to return to those registered any receipts in excess of actual expenses. It was also understood that the university would give proper academic credits to those who attended 85 per cent. of the course.

The clinics in both of these courses have been generally supplied with patients by the physicians enrolled. The patients are not charged for the service, and the classes are given an opportunity to observe the later methods of diagnosis and treatment. Thus far sufficient and valuable material for the conducting of the clinics has been readily found.

In planning a course of home study, four elements had to be considered: there were needed a class room, an instructor, clinical material and a class of physicians. With these four elements provided, graduate work could be done anywhere. The idea of these classes grew out of the necessity for some graduate training among the general practitioners who from the nature of their work and practice, or because of small incomes, found it impossible to go to distant cities or abroad for graduate instruction, or to pay the enormous expense involved. The average practitioner, from an income ranging from $1,000 to $1,800, is not able to pay the price for such instruction. In the two classes about 130 physicians have been enrolled. Under the old plan these physicians would have paid between $400 and $500 each, or a total of at least $52,000, for their instruction; they would have been required to leave their practice while studying, and would possibly have received even less instruction than the new plan provides with its outlay of approximately $4,000, and the physician is free to study at home. By this arrangement doctors may attend lectures and clinics without interrupting their general practice. If the two classes now being conducted prove to be as successful as conditions now indicate, other classes will be organized, and other subjects will be taught.

Hawaii January Report

Dr. R. W. Benz, secretary of the Hawaii Board of Medical Examiners, reports that four candidates were licensed, Jan. 25, 1916. The following colleges were represented:

College	Year Grad.	Total No. Licensed
Rush Medical College	(1907)	1
Johns Hopkins University	(1914)	1
University of Pennsylvania	(1898) (1899)	2

Arkansas Reciprocity Report

Dr. T. J. Stout, secretary of the State Medical Board of the Arkansas Medical Society, reports that six candidates were licensed through reciprocity from March 24 to May 9, 1916. The following colleges were represented:

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1908)	Illinois
College of Physicians and Surgeons, Keokuk	(1875)	Oklahoma
University of Louisville	(1914)	Tennessee
Memphis Hospital Med. Coll.	(1909) Mississippi; (1911)	Oklahoma
Vanderbilt University	(1911)	Tennessee

Arizona April Report

Dr. John Wix Thomas, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, April 4-5, 1916. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 9, all of whom passed. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago	(1897)	78.6
Northwestern University	(1902)	77.3
Rush Medical College	(1914)	80.1
Johns Hopkins University	(1901)	83.2
University of Minnesota	(1912)	82.4
University Medical College, Kansas City	(1904)	77.4
Washington University	(1913)	81
Memphis Hospital Medical College	(1892)	76.3
McGill University	(1890)	77.2

Ohio April Reciprocity Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports that 18 candidates were licensed through reciprocity, April 4, 1916. The following colleges were represented:

College	Year Grad.	Reciprocity with
Rush Medical College	(1914, 2)	Illinois
Fort Wayne College of Medicine	(1896)	Indiana
University of Louisville	(1902)	W. Virginia
Baltimore Medical College	(1911)	Maryland
College of Physicians and Surgeons, Baltimore	(1913)	Maryland
Tufts College Medical School	(1904)	Illinois
University of Michigan Medical School	(1902)	New York
Univ. of Michigan Homeopathic Med. School	(1914)	Michigan
Washington University	(1901)	Missouri
Albany Medical College	(1900)	New York
Cornell University	(1907)	New York
University and Bellevue Hosp. Med. College	(1915)	New York
Medico-Chirurgical College of Philadelphia	(1906)	Penna.
University of Pennsylvania	(1904)	Penna.
Meharry Medical College	(1912)	Texas
Marquette University	(1915)	Wisconsin
University of Palermo	(1906)	Missouri

District of Columbia April Report

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, April 11-13, 1916. The total number of subjects examined in was 16; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 7, of whom 4 passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1909) 79; (1915)	80.1
Chicago Hospital College of Medicine	(1915)	82.1
University of Michigan Medical School	(1894)	75.8
FAILED		
Baltimore Medical College	(1905)	69.5
Medico-Chirurgical College of Philadelphia	(1915)	73.1
Temple University	(1915)	70.3

Two candidates were licensed through reciprocity from Jan. 31, 1916, to March 30, 1916. The following colleges were represented:

College	Year Grad.	Reciprocity with
American Medical Missionary Medical College	(1902)	Maryland
College of Physicians and Surgeons, Memphis	(1911)	Georgia

Book Notices

AMERICAN PUBLIC HEALTH PROTECTION. By Henry Bixby Hemenway, A.M., M.D. Cloth. Price, $1.25 net. Pp. 283. Indianapolis: Bobbs-Merrill Company, 1916.

This work is for laymen, and gives such an account of public health work in the United States as will bring home to its readers first, the economic value of an efficient service and, secondly, that the latter can be obtained only by the employment of full time specialists in hygiene.

GAMES AND EXERCISES FOR MENTAL DEFECTIVES. By Hilda A. Wrightson. Cloth. Price, $1.25. Pp. 100, with illustrations. Cambridge, Mass.: Caustic-Claflin Company, 1916.

This little book contains explicit instructions (accompanied, when necessary, by diagrams) for playing 115 extremely simple games and exercises adapted to the feeble-minded. Dr. H. H. Goddard well says in his introduction:

"The teacher unfamiliar with feeble minds will perhaps think some of the games here described of no value. It is always hard for the more intelligent to understand the less intelligent, for normal teachers to understand defective children. It should be remembered that the joy of accomplishment is one of the greatest joys of life for all grades of intelligence. It is the fact that the list includes games adapted to the simplest minds which constitutes one of its excellencies."

NERVOUS CHILDREN: PREVENTION AND TREATMENT. By Beverley R. Tucker, M.D., Professor of Neurology and Psychiatry, Medical College of Virginia. Cloth. Price, $1.25 net. Pp. 147. Boston: Richard G. Badger, 1916.

The intention of this book is praiseworthy, but in execution it apparently fails. On the one hand, those readers who are willing to devote some study to causes and principles deserve a more thorough and painstaking exposition than these few pages afford; and, on the other, the needs of the readers who want merely explicit advice covering the details of the care and management of nervous children seem to be no more adequately met in the offhand, sketchy treatment accorded to practical subjects.

STUDIES IN ETHICS FOR NURSES. By Charlotte A. Aikens. Cloth. Price, $1.75 net. Pp. 320. Philadelphia: W. B. Saunders Company, 1916.

This is a practical book written by a practical nurse and teacher. The first section discusses the nurse herself, her personality, conduct and duty, with particular consideration of the qualifications needed for success in her profession. In the second part the problems of the training school are taken up, while the third part is devoted to the nurse after graduation. The plan of the book is to state a principle and follow with a discussion of a number of concrete problems involved, supplementing this discussion with the proposal of a number of pertinent questions. The carrying out of this plan is most satisfactory.

Medicolegal

Validity of City Milk Ordinance with Higher Requirements than Statute

(Kansas City vs. Henre (Kan.), 153 Pac. R. 548)

The Supreme Court of Kansas, in affirming a judgment in favor of the city, holds that a city ordinance, passed in pursuance of legislative authority to make regulations to secure the health of the city, which fixes a higher standard of food value in the milk sold within the city than is provided in statutory regulations as to the sale of milk throughout the state, and which imposes a more severe penalty for the violation of the ordinance than is annexed by the legislature for the violation of the statute on the same subject, is not repugnant to the laws of the state, unreasonable or invalid. The court says that there is a conflict in the authorities on this question; but, under the view which has been taken in Kansas, additional regulations and superadded penalty are not repugnant to the state statute, nor can they be deemed unreasonable. It may be necessary to make additional requirements and stricter regulations and to impose more severe penalties in a congested district like a city than are made and enforced in a rural district.

Malpractice in Failure to Change Treatment

(Van Boskirk vs. Pinto (Neb.), 155 N. W. R. 889)

The Supreme Court of Nebraska reverses a judgment for $1,500 obtained by the plaintiff for alleged malpractice in the diagnosis and treatment of an injury to his ankle caused by a fall of about 15 or 18 feet, May 4. The court believes that the defendant's substantial rights were injuriously affected by the submission to the jury of the question as to negligence in the original examination and diagnosis. The court is convinced that if the defendant was guilty of any negligence at all it was in failing to change his manner of treatment after he had reason to believe that a fracture had occured. It appeared that another physician was called first, and that he and the defendant diagnosed the injury as being a severe sprain. The ankle was placed in splints and the patient placed in charge of a nurse who was instructed to pour liniment on it. The other physician then gave the case over to the defendant. Three or four days after the injury the splints were removed, the foot placed on a pillow with a sandbag to support it, and the nurse was directed to massage the ankle and move it as much as the patient could stand. The patient remained under the defendant's care in the hospital seventeen days. At the time he left he was unable to bear his weight on the injured foot without pain or to walk without crutches, and finally the foot remained fixed in such a position that the front part of it was left at a downward angle from the normal position. July 11, he suggested to the defendant that he would like a roentgenogram taken, and one was. It disclosed that the fall had caused a slight impacted fracture of the forward part of the astragalus and a rupture or raising of the periosteum on the posterior portion of this bone. The defendant testified that he had an idea on the Saturday following the injury that there was a fracture of the articular ends of the bones, and that from May 11 he treated the case with the view that the ankle was fractured, etc. The plaintiff's petition, after pleading negligent diagnosis, in substance alleged that the defendant wrongfully advised him that his injuries were being properly treated and that he would soon recover the use of his foot and ankle, and that, relying thereon, he was induced to allow the defendant to continue to treat the injuries until about June 22, when the plaintiff was discharged from further treatment, and that if the defendant had properly diagnosed and treated the injury he would have wholly recovered in two or three months and would have had the unimpaired use of his limb. The court says it is with some hesitancy that it has come to the conclusion that under these allegations proof of negligent and unskilful treatment, after the defendant had reason to believe a fracture had occurred, might be made. There was sufficient evidence on this point to go to the jury.

The question whether a physician and surgeon, after having reasonable grounds to believe that he made a mistake in diagnosis and that a fracture existed in a case in which the injury had been considered by him to be merely a sprain, exercised reasonable and proper care and skill after he reached such conclusion, is a matter, under proper pleadings and instructions, for a jury to determine. A physician or surgeon, when he accepts employment to treat a patient professionally, must exercise such reasonable care and skill in that behalf as is usually possessed or exercised by physicians or surgeons in good standing, of the same system or school of practice, in the vicinity or locality of his practice, having due regard to the advanced state of medical or surgical science at the time, and he is not liable for a mistake in judgment made in diagnosing a physical injury where he used such ordinary and reasonable care and skill, even though his judgment may be erroneous.

Negligent Treatment of Child — A Competent Witness

(Van Sickle vs. Doolittle (Ia.), 155 N. W. R. 1007)

The Supreme Court of Iowa reverses a judgment on a verdict directed for the defendant, a homeopathic physician who was charged with malpractice in the treatment of a girl 9 years and some months of age. The girl appeared to have been in good health until Saturday, and then complained only of a headache. On Sunday the defendant was called and treated her until Wednesday afternoon, when she died. It was alleged that he failed to exercise ordinary care and skill in endeavoring to cure her of her ailment, in that he "neglected to see her with such frequency as the case demanded; by neglecting to give her proper medicine and skilful treatment; by neglecting and refusing to do anything for her relief and cure when it became apparent that she was in a dangerous and precarious condition, and by unskilfully and negligently administering to her certain medicine . . . which was injurious to her at the time of its administration, and which the defendant, if he had used proper care and skill, ought not to have administered to said child in the circumstances at said time existing." The defendant testified, among other things, that he left bryonia in one vial, and a dilution of aconite and gelsemium in another; could not tell exact strength, thought there was the equivalent of about two thirds of a drop of tincture of aconite; that a homeopathic physician never gives medicine for diseases, but on the indications, etc. The court says that nothing short of setting out the evidence in detail could well illustrate the manner of the defendant's diagnosis of the condition and symptoms of the child, the dilatoriness with which he attended her when summoned to her bedside, his peculiar method of preparing the medicine to be administered, and his utter lack of appreciation of his obligation to his patient when in sore need of relief. The jury might well have found that after Tuesday morning her ailment was serious, and yet that the defendant gave her scant examination and apparently was unable to say whether she was afflicted with typhoid fever, brain fever, smallpox, gastritis, influenza or paralysis. He might then have been found to be negligent in diagnosing her condition or symptoms and therefrom ascertaining her ailment. Not attending the child for several hours after undertaking to do so, when summoned, in view of her condition, might well have been found to be negligence on his part. His testimony left much uncertainty as to the quantity and quality of any remedy administered, and whether it was appropriate to the symptoms manifested, and the jury might have found this to be in such infinitesimal quantities as to have no physiologic effect on her system. The court has little difficulty in finding that the evidence was such as to carry the issues as to the defendant's negligence on the first three grounds of alleged negligence to the jury. Its only difficulty is in determining whether or not death might have been found to be in consequence of such negligence. This is always a question of probability in such cases, for no one can say absolutely whether a patient, even though properly treated, would have survived. The inquiry necessarily is whether recovery would have been the more likely in that event and a cure in all reasonable probability effected.

After a recital of the conditions and symptoms of the girl from Saturday until the time of her death, as shown by the evidence, including the treatment given by the defendant, a physician of the regular or allopathic school was asked what, in his opinion, as indicated by the symptoms revealed in the question, the child was probably suffering from. The court holds that it was error to sustain an objection to the question as above, and also to it with all references to medicines administered withdrawn, on the ground that the witness was incompetent because he belonged to a different school.

Society Proceedings

COMING MEETINGS

Montana State Medical Association, Miles City, July 12-13.
Washington State Medical Association, Seattle, July 12-14.

THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Third Annual Meeting, held in Washington, D. C., May 11-12, 1916

The President, DR. JAMES W. JOBLING, Nashville, Tenn., in the Chair

Relation of Lipoids to Immune Reactions

DR. JAMES W. JOBLING, Nashville, Tenn.: Peterson and I have shown that bacteria are protected from the action of ferments by the unsaturated fatty acid compounds present in the cells, and that oxidizing agents such as iodin, hydrogen peroxid, etc., will destroy this protective action. We also found that soaps injected intravenously into guinea-pigs in proper doses produce the symptoms and postmortem findings of anaphylaxis. We investigated, first, the action of lipoids when given with the intoxicating dose of antigen, and secondly, the influence of increasing the antitryptic power of the serum. We found that increasing the antitryptic power of the serum, and the addition of soaps to the intoxicating dose, enabled the animal to resist several times the amount of the specific protein fatal for the controls, while a smaller dose of the antigen was required when lipoid-free proteins were used. The removal of lipoidal antiferments from serum permits the formation of toxic substances which we have termed "serotoxins." These toxic substances are formed through the action of the serum proteases on the serum proteins as soon as the protective lipoidal substances are removed. The lipoids of the body are of far reaching consequence in almost all vital cellular phenomena.

Inadequacy of the Anaphylatoxin Theory of Anaphylaxis

DR. RICHARD WEIL, New York: The test tube reaction differs from the anaphylactic reaction in the living animal or in the suspended uterus. According to the physical theory, the reaction is an expression of the alternation of cellular equilibrium which results when external antigen is brought into contact with cellular antibody. In guinea-pigs the conclusion seems unavoidable that anaphylactic death is due to a cellular reaction, and that the serum plays no rôle therein. There is no question, on the other hand, that during the prolonged or delayed shock of the dog, striking alterations occur in the chemical composition of the blood. These changes are due in the first instance to the freeing of protease, as a result of the reaction of the sensitized cells to the antigen. It still remains to determine whether the changes in the serum produced through the activity of the protease are really the cause of the latter symptoms, or merely accompaniments of the shock in this species. Even in the former event, the primary step in the entire reaction, namely, the discharge of protease, would be cellular.

The Protein Poison

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: Casein yields a large percentage of protein poison which, after the removal of all traces of mineral acid, is strongly acid in and of itself. It does not give the ninhydrin test until after being split up with acid. The poison gives a skin reaction in all persons,

and it is not without harm when administered by the mouth. Animals can be poisoned acutely or chronically by oral administration. In chronic poisoning by feeding, extensive fatty degeneration results. The protein poisons from diverse proteins are not identical. The protein poison from casein combines with certain unbroken proteins. In this combination the acidity of the poison is neutralized and its physiologic action diminished. The protein poison may be extracted from the tissues of animals killed with it, and its presence demonstrated and amount roughly estimated by intravenous injections of guinea-pigs.

Specific Character of Immunity Reactions

DR. E. C. L. MILLER, Richmond, Va.: For many years it has been recognized that immunity reactions are specific. However, when more detailed study is given to some of these immunity reactions, their specific character seems less sharply defined. The specific character of a protein, at least for the anaphylactic reaction, and probably for other biologic reactions, depends, not on the protein as a whole, but on certain parts or qualities or chemical groups in the protein molecule. The reason biologically related proteins react similarly is that they have inherited certain common groups from a common ancestor; but it should cause no surprise that entirely unrelated species should occasionally possess common groups. Immunologists have been inclined to assume that antigen and antibody are related to each other in an absolutely specific way, and if indications of an antibody were found, it was assumed that it must have been produced by its own antigen. There have been plenty of instances in which no such antigen could be found; but they were ignored.

DISCUSSION

DR. H. GIDEON WELLS, Chicago: In studying the fundamental principles of biologic processes, one must reduce the elements involved to the simplest possible. Unfortunately we apparently cannot get below the whole protein molecule, as one end of our reactions, and generally must use the warm blooded mammals as the other side of the equation. The best we can do, therefore, is to use pure protein. Those proteins which differ greatly from the majority of proteins are especially favorable materials for purification, such as noncoagulable ovomucoid of egg white, or alcohol soluble proteins of the grains. Using such isolated proteins, we have found evidence that, delicate as the specificity of immunologic reactions seem to be, immunologic differences do not seem to occur between proteins that cannot also be differentiated chemically. By comparative study of different proteins isolated from the hen's egg by anaphylaxis, I was able to distinguish five proteins definitely distinguishable from one another by this means. Proteins of the egg that cannot be differentiated by chemistry cannot be differentiated by anaphylaxis.

DR. JOHN A. KOLMER, Philadelphia: More and more importance is being attached to the rôle of the lipoids in this field. It has been proved that toxic substances may be prepared of various animal and vegetable proteins by the method employed by Dr. Vaughan, and that likewise toxic substances can be produced in normal and immune serums by the addition of such substances as kaolin and agar capable of producing anaphylactic-like symptoms and lesions in experimental animals; but it is not yet clear what relations these observations bear to the mechanism of anaphylaxis. I should like to ask Dr. Vaughan if he is prepared to make any further statement in regard to the relation between his protein poison and the mechanism of anaphylaxis.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: I observed the appearing and disappearing wave of toxicity in serums being incubated with agar and other foreign bodies. I spent much time in trying to measure these waves and catch the rhythm of the toxicity, but without results. I am not yet ready to abandon the idea that a protein poison is formed in anaphylactic shock. No one can tell whether this is due to a chemical or a physical process. I can conceive that a body so complex as the protein molecule may be dissociated and a poisonous action developed even by high dilution. If so stable a body as sodium chlorid can be broken up into its ions by dilution, is it not possible that even more marked alterations might occur in a highly complex molecule? I am convinced of the fact that the blood contains proteins from which a protein group is easily detached.

DR. RICHARD WEIL, New York: Time has established the truth of the cellular theory of anaphylaxis, so that in the guinea-pig, at all events, it seems certain that serum changes with the production of anaphylatoxin can play no rôle in the typical evolution of shock. It would be a mistake, however, to assume that the process which takes place in the guinea-pig must necessarily be universally applicable to the anaphylactic phenomenon throughout the animal kingdom. We know that as between the guinea-pig and the dog, for instance, certain striking differences exist. We know with certainty that serum changes of a chemical nature accompany anaphylactic shock in the dog. This fact, however, by no means argues that these changes are productive of the anaphylactic symptoms. These symptoms may result from the gradual development of the cellular response to the antigen, taking place, however, more slowly and more gradually than in the guinea-pig, just exactly as diphtheria toxin produces its effect slowly and gradually. It still remains to determine whether serum changes in the dog, resulting in the production of some unidentified substance, described as anaphylatoxin, are simply an accompaniment of anaphylactic shock in that animal, or are actually productive of the symptoms.

Leukocytosis and Its Importance as a Diagnostic Sign in Vaccine Treatment

DR. JOSEPH HEAD, Philadelphia: I have taken fifty-four of my vaccine patients and made 714 separated blood counts containing complete data. Thirty-three of these fifty-four cases did not in the course of the treatment give a leukocyte count of over 20,000, but twenty-one cases did show transitory leukocyte counts of over 20,000 that jumped up like a rocket, only in a few days to sink back to 8,000 or 4,000, with either no symptoms to speak of or an indisposition so slight as to be almost negligible. This series of cases certainly indicates that a transient leukocyte count cannot be considered of itself an infallible sign of pus or even of semiacute inflammation of a serious nature. Persistence of the leukocytosis, accompanied with a great reduction in the number of red cells and hemoglobin, would indicate a condition of an entirely different significance. Blood count work is of great value in determining vaccine dosage. In one or two cases in which the infections were chronic or general, the blood counts were of no value as a guide, but ordinarily they will give accurate sensitive warning of an oncoming reaction. There is, however, no one special phase to be looked for as peculiarly diagnostic; it is the way the blood acts generally under the treatment that should be noted. If the hemoglobin, red cells and white cells are fairly normal in number, size and staining capacity, or if the constituents of the blood under vaccine treatment show a steady improvement, the vaccine dosage can be maintained or increased; but if the dose of vaccine is followed either by leukocytosis or leukopenia, or the red cells or hemoglobin drop off, or if poikilocytes or nucleated red cells appear, the vaccine dosage should be watched with great caution, and if unfavorable symptoms develop, the vaccine should be stopped, at least temporarily.

Action and Therapeutic Effects of Leukocytic Extract

DR. W. E. RICHARD SCHOTTSTAEDT, Toledo, Ohio: This work has been carried on with leukocytic extract prepared from leukocytes obtained from the blood of normal animals. Subcutaneous injections in normal individuals and patients suffering from acute infections produce a marked leukocytosis. The leukocyte increase is often 300 per cent., and is highest ten or twelve hours after the administration of the extract. The increase in the neutrophil elements is particularly marked, and coincident with it is a less marked increase in the eosinophil cells. Clinically, striking beneficial results have been obtained following its use in acute infections, such as furunculosis, pneumonia, acute bronchitis and acute tonsillitis. Chronic affections have had a less striking clinical improvement, though the leukocytic increase has been as marked as in the foregoing cases.

DISCUSSION

DR. W. EGBERT ROBERTSON, Philadelphia: From the clinical standpoint, the work of Dr. Head has very important bearings. In mouth infections there are two features which are very important. Not only is there a very high count of eosinophils, 17 per cent., which is difficult to explain, but there are other conditions difficult to explain.

DR. WILLIAM LINTZ, Brooklyn: We have made experiments with guinea-pigs and rabbits, inoculating them every two hours, and it was interesting to note the marked polymorphonuclear count that followed, as well as the marked leukocytosis. Leukocytic extract was prepared by us, and we find that we get the best results by the use of distilled water. Out of from fifteen to eighteen cases of pneumonia, in which there was a decided leukocytosis, not one patient was benefited by the use of the leukocytic extract.

Anaphylactic Food Reactions in Dermatology, With Special Reference to Eczema

DR. ALBERT STRICKLER, Philadelphia: Fourteen food products have been tried out in the attempt to demonstrate their relation to various skin diseases. The method of injection employed was the endermic one. The dose used was 0.1 c.c. In none of our cases was there any manifestation of soreness of the arm or enlargement of the associated lymph glands. We studied forty-six cases of eczema, ten cases of urticaria, thirteen of acne, and eleven of psoriasis. From this study we conclude that anaphylactic skin tests are of value in the etiologic diagnosis and in the treatment of various diseases of the skin. These reactions find their greatest value in eczema. In chronic urticaria, acne and psoriasis, the tests are disappointing. Approximately 20 per cent. of individuals affected with eczema are not sensitive to any of the common foods. Normal persons do not react to these tests.

Allergic Skin Reactions as an Index of Immunity

DR. JOHN A. KOLMER, Philadelphia: Our studies demonstrated that there is no experimental support for the theory that allergic skin reactions may be taken as an index to resistance and immunity, so far as it is possible to determine the presence of antibodies in vitro.

Comparative Studies of the Wassermann and Hecht-Weinberg Reactions in Syphilis, With Special Reference to Cholesterinized Antigens

DR. JOHN A. KOLMER, Philadelphia: In 82 per cent. of serums examined, the results of the Hecht-Weinberg and Wassermann reactions were the same. In fifteen per cent. the Wassermann was negative and the Hecht-Weinberg test was positive. Of these reactions the positive Hecht-Weinberg tests were largely correct and occurred mostly with the serums of syphilitic persons under vigorous treatment; in 3 per cent. the Wassermann was positive and the Hecht-Weinberg was negative; all of these occurred with the serums of persons in the latent tertiary stages of syphilis. With the serums of persons known not to be syphilitic, the Hecht-Weinberg test showed about 10 per cent. falsely positive reactions; most of these reactions occurred with the alcoholic extract of syphilitic liver, and fewest with the extract of acetone insoluble in lipoids. All of these serums yielded negative Wassermann reactions with all antigens. The Hecht-Weinberg test was found unreliable in the diagnosis of syphilis on account of the tendency to yield proteotropic reactions; it was more delicate than the Wassermann test, however, and had its greatest value in a negative reaction as a control on treatment with the serums of known syphilitics.

DISCUSSION

DR. EDWARD B. VEDDER, Washington, D. C.: I wish to ask Dr. Kolmer whether he has used antigen in a dilution of 1:6 instead of the customary dilution of 1:10, as recommended by Walker in order to determine whether syphilitics were cured. I should also like to ask if the use of antigen in this quantity (1:6) in the ordinary Wassermann would not furnish as good evidence of a cure as that obtained by the use of the Hecht-Weinberg test.

DR. OSCAR BERGHAUSEN, Cincinnati: I have been in the habit of using cholesterinated antigens, Noguchi's and others, and it is possible to get a reaction, especially in the concentrated reactions. My experience has been that after determining a positive Wassermann, using the same technic with the Hecht-Weinberg method, positive reactions were obtained. The results seem to be entirely dependent on the antigen used. My experience has led me to believe that the Hecht-Weinberg test is the real one and the Wassermann is the control test.

DR. JOHN A. KOLMER, Philadelphia: I have not used Dr. Walker's method with large doses of cholesterinized antigen. Owing to the antilytic properties of cholesterin I did not employ any of these extracts unless the anticomplementary unit of each was at least twenty times greater than the antigen unit. In a study of the nonspecific reactions observed with the Hecht-Weinberg technic with normal serums, all the serums had been likewise subjected to the Wassermann test, and all reacted negatively with all antigens, including the cholesterinized extracts.

(To be continued)

AMERICAN PEDIATRIC SOCIETY

Twenty-Eighth Annual Meeting, held in Washington, D. C., May 8-10, 1916

The President, DR. ROWLAND GODFREY FREEMAN, New York, in the Chair

Physiologic Action of Atmospheric Conditions

DR. FREDERICK S. LEE, New York: Except under extraordinary conditions, the harmfulness of expired air is not due to its chemical compounds, but to certain physical factors. If it is not too moist, too warm or too still, air is not harmful. When an external temperature is fairly comfortable, an elevation of it, especially when accompanied by humidity, is deleterious; and this deleteriousness is more pronounced when the air is stagnant. An electric fan will obviate some of the bad effects; but it is better to reduce the temperature, and the good effect is assisted by reduction of the humidity. Cool, dry air, in motion, is the most physiologically wholesome aerial envelope for the body. Uniformity should be avoided; there should be frequent and marked changes. Artificial ventilating systems should be combined with window ventilation.

Mode of Infection in Pyelitis of Infancy

DR. RICHARD M. SMITH, Boston: In favor of the ascending route is the greater frequency of pyelitis in girl babies; but aside from this, there is no experimental or clinical evidence in its support. The hematogenous route is supported by clinical and experimental evidence, which shows that the colon bacillus may enter from the gastro-intestinal tract into the blood and be excreted by the kidney, causing inflammation at the point of excretion, namely, the pelvis of the kidney. Bacteria may also gain entrance to the blood from the genital organs, especially in the female, in whom exposure to contamination is particularly easy. The anatomic difference between the organs in the two sexes explains the greater frequency of the disease in female infants.

DISCUSSION

DR. HENRY F. HELMHOLZ, Evanston, Ill.: In some experiments in animals, I found that in three out of twelve cases I was able to show, by means of the roentgenogram taken immediately after the injection, that there was a reflux from the bladder into the ureter.

Diet and Growth in Infantile Scurvy

DR. ALFRED F. HESS, New York: There is a gradual falling off in growth at about the seventh or eight month in many babies who have been fed on pasteurized milk. Many of these infants do not show the typical symptoms of scurvy. Tachycardia, however, is an early and typical symptom. Growth in both length and weight is markedly affected, both finally ceasing. When orange juice, orange peel juice or

potato water was added to the diet, there was often a supergrowth, which continued until the normal weight and length for the infant's age was reached, when the rate of growth became normal. Following the discontinuance of this antiscorbutic food, although the infants sometimes continued to gain for a month or two, there was a gradual flattening of the curve of growth. As soon as orange juice was again given, however, a sharp gain was manifested, showing that the babies were receiving some essential constituent of the food that had been lacking. Putting these babies on unpasteurized milk had the same effect as giving fruit juice with the pasteurized milk. Orange juice and orange peel juice did not lose their antiscorbutic elements by being boiled, although milk did. While pasteurized milk affords security against infection, it must be considered as an incomplete food, lacking the elements necessary to proper nutrition and growth. This is probably the reason that infants fail to gain at about the seventh or eighth month of life, and begin to grow better as soon as fruits and vegetables are added to their dietary. During the early months, they are probably protected by the antiscorbutic elements inherited from their mothers. One should commence giving them orange juice at about the age of 1 month, so as to prevent the development of the scorbutic state. It is probable that other factors than lack of growth are concerned in the production of infantile scurvy. A diet may possess growth-producing properties, and yet be unable to afford a means of preventing or curing scurvy.

DISCUSSION

DR. L. EMMETT HOLT, New York: Unless we who are interested in the production of good milk and certified milk make strong our disapproval of the general pasteurization of all milk, it will not be many years before we shall be face to face with the fact that it will be impossible to secure any but pasteurized milk. We see bad effects from its use less frequently among the babies of the poorer people, because they give other food than milk to their babies much earlier than has been customary among the better class of people. The treatment to counteract this scorbutic tendency should be begun early and continued.

DR. CHARLES M. HERRMAN, New York: If orange juice, when boiled, retains its antiscorbutic power, why does simply heating the milk destroy the antiscorbutic elements in it?

DR. SAMUEL S. ADAMS, Washington, D. C.: Within the last ten days, I have had cases of scurvy in children who had been fed on the best pasteurized milk delivered in Washington. I am not opposed to home pasteurization under proper supervision, but I am opposed to commercial pasteurization. Many dealers resort to pasteurization in order to sell bad milk.

DR. A. D. BLACKADER, Montreal, Que.: This winter I had two patients brought to my office for obscure symptoms, partly nervous, and associated with defective growth. There was rapid disappearance of all the symptoms under the use of orange juice and unpasteurized milk.

DR. HENRY L. SHAW, Albany, N. Y.: Some years ago, I was opposed to pasteurization; but during the last year I have been in a position to see the reports of certain milk-borne epidemics that came to the New York board of health, and my opinion has changed completely. There were sixteen epidemics outside of New York City which were positively traced to the milk. I do not think that tuberculosis is the greatest danger from the use of raw milk. Sore throat, scarlet fever and diphtheria are carried in this way. I used to advise the giving of orange juice after the third month, but shall recommend henceforth that it be given earlier.

DR. PERCIVAL J. EATON, Pittsburgh: Commercially pasteurized milk is not all real pasteurized milk. In many cases, it is only sterilized. The cases that come to my mind were all in babies fed on so-called pasteurized milk. We get better results by using the raw certified milk, if the certification is properly done, than by having all milk pasteurized.

DR. S. M. HAMILL, Philadelphia: We should come to the defense of properly prepared raw milk. The tendency to make pasteurization apply to all grades of milk is so manifest that it is incumbent on us to take some action very promptly. The medical profession should not recognize the establishment of milk commissions that are absolutely unprepared to do the certification of milk. We should state definitely what certification should mean. I am in favor of the pasteurization of all milk other than the certified. There are dangers from unsatisfactory pasteurization, however, and from improper care of the milk after pasteurization; but they are not so great as from the use of raw milk. I have had as many cases of scurvy from the use of raw milk as when pasteurized milk was employed.

DR. HENRY L. COIT, Newark, N. J.: I have discarded the word "pasteurize," because I have found that I can accomplish more with mothers by using the word "refine." The most important thing is to obtain initially clean milk. I, too, am opposed to commercial pasteurization.

DR. HENRY HEIMAN, New York: Whether we have been giving milk raw or pasteurized, scurvy has been discovered, just the same. Pasteurized milk is not the proper food for children, and it will soon cease to be pasteurized if it is not kept properly after the bottle is opened. Last year I gave 5 drops of orange juice in water with sugar at the age of 1 month. It contains the salts necessary for growth.

DR. PHILIP VAN INGEN, New York: Since the pasteurization of milk has become general, we do not read much of an increase in the death rate from scurvy, but we do read of the decrease in the death rate from diarrheal diseases.

DR. MAYNARD LADD, New York: I have seen half a dozen cases of scurvy develop among babies who were presumably fed on raw milk; but on investigation, I found that in these cases an error had been made by overheating the milk before giving it to the babies. They were really getting pasteurized milk.

DR. ALFRED F. HESS, New York: If it is once realized that pasteurized milk is inadequate as a food, there will be fewer cases of scurvy following its use. To supply this deficiency, all that is necessary is to give with it either orange juice or potato water. Some persons have a predisposition to scurvy. In infants, the susceptibility depends partly on the amount of essential substances which the mother had and the food which she took during her pregnancy, and partly on the length of time the infant was nursed. Certain substances will stand boiling in a watery solution, such as orange juice, when they will not stand boiling in a medium rich in fats and proteins.

The Hospital Care of Premature Infants

DR. L. E. LA FETRA, New York: The experimental observations were made at Bellevue, where the police department brings all foundlings. I have gone through the records of the last 200 cases, and found thirty in which the infants were saved and discharged with sufficient weight to make it probable that the mothers could care for them successfully. One hundred and eighteen died during the first three days. Thirty-six per cent. of those who lived beyond three days were saved. It is most unusual that any baby weighing less than 2½ pounds can be saved. The symptoms are extreme muscular feebleness and inability to nurse. The mother may have abundant milk, and the baby good digestion, but it cannot obtain nourishment on account of its muscular weakness. It radiates more heat proportionately than a normal infant, and is very susceptible to temperature changes. There is a great tendency to attacks of cyanosis, and great susceptibility to infection. A disease, however, is not always fatal. So far as possible, the condition of intra-uterine life should be simulated in treating these babies. They should be kept in an even temperature, approximating that of the human body, and shielded from all sorts of external shocks. The skin should be protected from contagion, and the eyes from light. The inhaled air should be moist, warm, and as free as possible from germs. The food should be such as to require the least possible digestive effort. The most satisfactory incubator is that devised by Edwin A. Cragin, but I think that usually it is not a good thing to put the baby in an incubator. It is better to set aside a small room and have it kept at the proper temperature. Such a room is also

of advantage in managing feeble infants that are not premature, but whose temperatures are subnormal. The food must be put into the baby's mouth, and often into its stomach. It is best to use the Buck feeder, which teaches the baby to suck. Breast milk mixed with whey is the best food.

Further Experience with Homogenized Olive Oil Mixtures

Dr. Maynard Ladd, Boston: The method dealt with is based on the substitution of olive oil for cow's fat in milk modifications, in order to get rid of the volatile fatty acids of cow's milk, which, in cases of fat intolerance and difficult feeding, with malnutrition, were assumed to be sources of irritation and indigestion. The emulsion of olive oil is brought about by the use of the homogenizing machine invented by M. Caulin of Paris. In a series of thirty-seven cases which had been unsuccessfully fed on an average of 6.3 months each, with a gain of only 5 ounces a month, successful results were obtained by the use of this method. Over a period of 4.7 months in the same series, the rate of gain was increased to 18.15 ounces a month, with a corresponding improvement in the general condition of the patients. This represents a gain of 363 per cent. over that of the previous feedings. Favorable results were also obtained in another series of cases of convalescents from infectious diarrhea, the usual loss of weight being considerably diminished.

A Method for Preparing Synthetic Milk for Studies of Infant Metabolism

Drs. Henry I. Bowditch and Alfred W. Bosworth, Boston: Better control of the elements entering into the composition of infant feeding in liquid form led to experiments, with the subsequent result of the preparation of synthetic milk for the study of infant metabolism. The method consists in four steps: First, the preparation of isolated food materials for use in making milk. Second, the reassembling of these materials to give a mixture of the desired percentage composition. Third, the emulsification of the fat and the solid or insoluble constituents entering into the composition of the food. Fourth, the pasteurization or sterilization of the food, after it has been made. In appearance, this synthetic milk strongly resembles the natural food, the emulsion being quite permanent. The cream rising after long standing may be easily shaken back into the mixture.

Some Early Symptoms Suggestive of Protein Sensitization in Infancy

Dr. B. R. Hoobler, Detroit: When a sufficient amount of unaltered protein is absorbed, a reaction takes place, known as protein sensitization. This is not of an explosive character, as in acute anaphylaxis, but is suppressed. The symptoms may be divided into five groups, relating, respectively, to the skin, the upper respiratory tract, the lower respiratory tract, the digestive system, and the nervous mechanism. These symptoms come and go with great rapidity. Even minutes will sometimes calculate the length of their stay. Often but one will appear; and later, in the same child, there will be different manifestations. The symptoms gradually increase in severity and variety. They appear more frequently, and remain longer. Some continue throughout the lifetime of the individual, but others disappear. Many of these are also symptoms of other common diseases. When, however, they appear and reappear many times in the same infant early in its life, one should be on the lookout for protein sensitization. It is important that the condition be recognized early; then it need not go on to its extreme manifestations.

DISCUSSION

Dr. Oscar M. Schloss, New York: I have had a large number of skin tests made in infants with chronic nutritional disorders, with inconclusive results. It has been demonstrated in many instances that biologically perceptible protein may occur in the blood stream after the ingestion of certain protein foods, and that this is excreted in the urine. In animals, the absorption of this unaltered protein leads to sensitization; but this has not been demonstrated to occur regularly in human beings. Often several members of the same family are affected with the same allergic condition. This probably explains the idiosyncrasies of some children to foods they have never before ingested. There must be in human beings some state of the tissues, either inherited or acquired, that is different from the definite sensitization of an animal by a foreign protein. I have had four cases of asthma that had a definite relation to food. In all, desensitization was accomplished with good results.

Dr. Fritz B. Talbot, Boston: The condition of anaphylaxis that gives symptoms of asthma is a relatively rare one. In looking through the hospital records, I found very few cases of asthma that might have been of anaphylactic origin, but more among the skin cases. I have not been able to find any connection between erythema and anaphylaxis. The mild cases have been due to external irritation. In some cases of urticaria, the symptoms are all due to anaphylaxis. I have been unable to connect miliary rashes with any anaphylactic phenomena. The symptom of rough skin may sometimes be connected with anaphylaxis, but it may also be connected with deficient thyroid secretion. There are two forms of eczema, one of which apparently has no connection with anaphylaxis and is cured by merely reducing the fat in the food. In the other, Dr. Schloss and others have found definite skin tests. We believe that these cases are of anaphylactic origin, but they do not always do well when we take out the food that gives the skin test. Of the symptoms connected with the respiratory system, wheezing, when there are râles in the chest, with no fever and nothing else to explain it, is of anaphylactic origin; but what we should make our diagnosis on are the typical râles of chronic bronchitis and, coincidently with these, a prolonged expiration. In the majority of cases, croup is not of anaphylactic origin; but in a few instances, there is no question that it is. There is also no question that some digestive disturbances are of anaphylactic origin. The symptom of restlessness is usually due to too many visitors and too much grandparent.

(*To be continued*)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

June, XI, No. 6, pp. 405-473

1 *Congenital Obliteration of Bile Ducts; Diagnosis and Suggestions for Treatment; Report of Case. J. B. Holmes, Baltimore.
2 *Nonprotein Nitrogenous Constituents of Blood and Phenolsulphonephthalein Test in Children. J. S. Leopold and A. Bernhard, New York.
3 *Cutaneous Reaction From Proteins in Eczema. K. D. Blackfan, Baltimore.
4 Case of Nonparasitic Chyluria, Chronic Nephritis, in Child. A. Hymanson, New York.
5 *Skin Manifestations With Streptococcus Infection. A. B. Schwartz, Chicago.
6 *Case of Acute Myelogenous Leukemia in Infant. J. H. M. Knox, Jr., Baltimore.

1. **Obliteration of Bile Ducts.**—Congenital obliteration of the bile ducts is said to be not an extremely rare disease. Over 100 cases have now been reported. Holmes' patient died when 15 weeks of age. The child's skin had been yellow since birth, his eyes were yellow, and the urine stained the napkin. The conditions found at necropsy were these: an anomalous arrangement of the hepatic ducts, absence of the common duct throughout the greater part of its extent, an impervious condition of the cystic duct with abnormalities of the gallbladder, and a moderate grade of cirrhosis of the liver.

2. **Nonprotein Constituents of Blood and Phenolsulphonephthalein Test in Children.**—In a series of fifty children free from evidences of renal disease, chemical examination of the blood gave the following results: the total nonprotein nitrogen varied between 19 and 40 mg. per 100 c.c. of blood, the average being 28 mg.; the urea nitrogen varied between

8 and 21 mg., the average being 12 mg.; the uric acid varied between 0.6 and 3.2 mg., the average being 1.8 mg.; the creatinin varied between 0.5 and 4 mg., the average being 1.5 mg.; and the phenolsulphonephthalein varied between 50 and 96 per cent., the average being 70 per cent. A smaller number (16) of cases with renal involvement were examined. In acute nephritis the nonprotein nitrogen constituents were found within normal limits; the phenolsulphonephthalein excretion was diminished. In chronic nephritis the nonprotein nitrogen constituents were usually increased, while the phenolsulphonephthalein excretion was diminished. In passive congestion the nonprotein constituents were normal while the phenolsulphonephthalein was diminished. In one case of sarcoma of the kidney with normal urinary findings the nonprotein constituents, with the exception of uric acid, were normal. The latter was slightly increased. The phenolsulphonephthalein excretion was diminished.

3. **Cutaneous Reaction from Proteins in Eczema.**—Of forty-three patients without eczema examined by Blackfan, only one showed any evidence of susceptibility to protein by cutaneous and intracutaneous tests. Of twenty-seven patients with eczema, twenty-two gave evidence of susceptibility to proteins. Egg white, cow's milk and woman's milk were the substances that most frequently caused a reaction. If there was a reaction from one protein there usually was a reaction from several. Blackfan found that the intracutaneous test is more delicate than the cutaneous, but gives results that are more difficult to interpret. The removal of some or all of the animal proteins from the food brings about great improvement in some cases of eczema in older children and adults. With infants it is not successful, first, because it is impossible to feed an infant for a long time on a diet that contains no animal protein, without the risk of seriously affecting his nutrition, and second, because there is a strong tendency for the eczema to return, even though a protein-poor diet produces early improvement, and even though the protein-poor diet is continued.

5. **Skin Manifestations with Streptococcus Infection.**—Schwartz cites the case of a child, who, during an attack of bronchopneumonia, developed a generalized streptococcic infection. This was exhibited clinically by the almost simultaneous appearance of a purulent arthritis, erythema nodosum and erysipelas. A streptococcus was cultivated from the blood, from a joint effusion, and from an excised nodule. A suspension of the organism from these three sources was injected intravenously into three rabbits. Those receiving the bacterial growth obtained from the excised node and from the joint effusion died within forty-eight hours from septicemia. The rabbit which received the streptococcus isolated from the patient's blood was killed on the fifth day after injection. The right ankle joint was swollen and contained purulent fluid. Cultures from this joint gave a streptococcus.

6. **Myelogenous Leukemia in Infant.**—Besides the extreme youth of Knox's patient (9 months), the rapid course of the disease, less than three weeks, is noteworthy. There was no enlargement of the lymphatic glands or of the spleen and no evidence of hemorrhage or of necrosis of the mucous membranes. The symptoms apparently were referable to the gastro-intestinal tract. The great number of leukocytes in the circulating blood, 200,000 per c.mm. was too many to be accounted for by a possible focus of infection and directed attention to a further study of the blood. The differential count of the leukocytes showed the presence of a large number of myelocytes from the bone marrow and suggested the diagnosis of acute myelogenous leukemia.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

May, LXXIII, No. 5, pp. 769-996

7 *Syphilis in Its Relation to Obstetrics. E. P. Davis, Philadelphia.
8 *Syphilis in Relation to Some Social Problems. S. Pollitzer, New York.
9 *Syphilis of Internal Genital Organs in Female. G. Gellhorn and H. Ehrenfest, St. Louis.

7, 8 and 9.—Abstracted in THE JOURNAL, June 3, p. 1817.

American Journal of Physiology, Baltimore

June, XL, No. 4, pp. 503-612

10 *Effect of Ether Anesthesia on Electric Activity of Nerve. A. Forbes, R. McIntosh and W. Sefton, Boston.
11 *Method for Maintaining an Artificial Circulation Through Tibia of Dog, With Demonstration of Vasomotor Control of Marrow Vessels. C. K. Drinker and K. R. Drinker, Baltimore.
12 *Blood Pressure in Hemorrhage and Its Restoration. A. W. Downs, Philadelphia.
13 Structure of Fibrin-Gel and Theories of Gel-Formation. W. H. Howell, Baltimore.
14 Tension of Carbon Dioxid and Percentage Saturation of Hemoglobin in Venous Blood at Rest and at Work. W. M. Boothby and I. Sandiford, Boston.
15 Determination of Character and Quantity of Respiratory Change of Arterial Pressure in Man by Means of Korotkoff Sounds. F. E. B. Foley, R. G. Coblentz and C. D. Snyder, Baltimore.
16 Conduction of Painful Afferent Impulses in Spinal Nerves. S. W. Ranson and P. R. Billingsley, Chicago.
17 *Differences in Rhythmicity and Tone in Different Parts of Wall of Stomach. W. C. Alvarez, San Francisco.

10. **Effect of Ether Anesthesia on Activity of Nerve.**—In their experimental work the authors found that even when etherization in the cat is pushed to the point of abolishing respiration and causing death, the nerve trunk remains functionally active and exhibits what appears to be essentially normal action currents. With direct application of ether vapor to the isolated nerve muscle preparation, the action current in nerve regularly persists at least as long as contraction in the muscle, and in almost every instance longer. The evidence, so far as it goes, supports the view that nerve impulse and electric disturbance are inseparable.

11. **Nerve Supply of Bone Marrow.**—The existence of vasomotor nerves to the marrow is demonstrated by the Drinkers. These nerves respond on electric stimulation and on injection of epinephrin by causing vasoconstriction.

12. **Blood Pressure in Hemorrhage.**—Downs says gratifying results may be hoped for from the intravenous administration of normal salt solution. When the blood pressure has reached the level of shock, 30 to 50 mm., restoration of blood pressure and maintenance of the vital functions of the organism are a possibility, but cannot be expected with any certainty. In general it is stated that in hemorrhage injection of amounts of saline solution in excess of the amount of blood lost will give the best results; in severe cases the use of large amounts of normal salt solution, 50 to 100 c.c. per kilogram of body weight, is most likely to be attended by a successful outcome.

17. **Rhythmicity and Tone in Musculature of Stomach.**—Alvarez suggests that the gastro-intestinal tube may originally have been constructed so that the rhythmicity of any one segment varied inversely as the distance from the pharynx. The rate of contraction of the stomach muscle varies inversely as the distance from the cardia. The tone seems to be higher on the lesser than on the greater curvature.

American Journal of Roentgenology, New York

May, III, No. 5, pp. 243-292

18 Respiratory Movements of Heart and Diaphragm. G. W. Holmes, Boston.
19 Negative and Positive Roentgen Diagnosis of Gallstones. J. T. Case, Battle Creek, Mich.
20 *Roentgenologic Diagnosis of Duodenal Ulcer. R. D. Carman, Rochester, Minn.
21 Collargol Injection of Uterus and Tubes. C. Gottlieb, New York.
22 Treatment of Carbuncles by Roentgen Ray. K. Dunham, Cincinnati.
23 New Timer for Roentgentherapy. R. H. Stevens, Detroit.

20. Abstracted in THE JOURNAL, Nov. 13, 1915, p. 1752.

Annals of Ophthalmology, St. Louis

April, XXV, No. 2, pp. 219-434

24 Optic Atrophy—Observations on Series of Cases of Unusual Interest. F. Krauss and S. H. Brown, Philadelphia.
25 Internal Secretory System in Ophthalmology, With Special Reference to Goiter. R. S. Lamb, Washington, D. C.
26 Perimetric Studies of Normal and Pathologic Blind Spot of Mariotte. L. C. Peter, Philadelphia.
27 Massive Subconjunctival Injections of Cyanid of Mercury in Dangerously Injured or Infected Eyes. E. L. Jones, Cumberland, Md.
28 Fracture of Descemet's Membrane. S. Walker, Jr., Chicago.

29 Eye Records Designed Especially for Office Use. F. R. Spencer, Boulder, Colo.
30 Hole in Disk. J. H. Claiborne, New York.

Annals of Surgery, Philadelphia

June, LXIII, No. 6, pp. 641-777

31 Treatment of Fractures by Methods of Suspension and Extension. J. M. Flint, New Haven, Conn.
32 Foreign Bodies in Respiratory Tract; Report of Cases. N. W. Green and L. T. LeWald, New York.
33 *Tuberculosis of Breast; Report of Ten Cases. L. Durante and W. C. MacCarty, Rochester, Minn.
34 Dental Plate in Esophagus. G. D. Gregor, Watertown, N. Y.
35 Aperiosteal Stump and Its Care. H. H. M. Lyle, New York.
36 Method of Facilitating Infiltration Anesthesia. W. Bartlett, St. Louis.
37 Calcareous Degeneration of Prostate Gland; Report of Case. G. S. Peterkin, Seattle.
38 Technic of Suprapubic Cystostomy in Badly Infected Cases. H. Williams, London.
39 *Shirring Round Ligaments. J. W. Long, Greensboro, N. C.
40 Urethroplasty at Base of Glans Penis: Report of Case. C. W. Shropshire and C. Watterston, Birmingham, Ala.
41 Pathologic Diagnosis of Diseases of Appendix Based on Study of One Thousand and Five Hundred Specimens. E. Moschcowitz, New York.
42 Treatment of Retrocecal Appendix. H. A. Shaw, Seattle.
43 High Intestinal Stasis. J. E. Sweet, M. M. Peet and B. M. Hendrix, Philadelphia.
44 *Experimental Colonic Stasis. C. H. Frazier and M. M. Peet, Philadelphia.
45 Jejunal Ulcer, Following Gastro-Enterostomy for Duodenal Ulcer, with Complete Closure of Gastric End of Stoma. N. Ginsburg, Philadelphia.

33. Tuberculosis of Breast.—In the ten cases observed by Durante and MacCarty there were three in which no primary focus was clinically demonstrable; there were three associated with tuberculosis of the lungs and three cases associated with no other clinical tuberculous lesion other than tuberculosis of the axillary lymphatic glands, and one which was associated with a pleurocostal lesion. Only one of the ten patients was a male. The ages of the patients varied from 22 to 52. The left breast was affected six times, the right four times. The nipple was retracted in only two cases. Only one patient complained of severe pain. All but one, the man, had some pain. In only one case was the skin ulcerated; in two others it was slightly inflamed.

39. Shirring Round Ligaments.—The operation termed by Long "shirring the round ligaments," is applicable only in those cases in which it is expedient to open the abdomen. The first step is to seize the round ligament about midway with forceps. A round needle, armed with linen or silk, is thrust through the ligament close to the pelvic brim, just at its exit from the internal inguinal ring. The needle is again put through the ligament about a quarter of an inch farther toward the fundus. This is repeated again and again, until sufficient length of the ligament has been sutured to insure the proper degree of shortening. The last puncture of the needle is usually made through that portion of the ligament which is traumatized by the bite of the forceps. By pulling lightly on the ends of the suture the ligament begins at once to "shirr," as a dressmaker would say. Shirring the ligament necessarily shortens it.

44. Experimental Colonic Stasis.—The results of the experiments recorded by Frazier and Peet would seem to indicate that mere stagnation of feces in the colon of the dog, when on a normal mixed diet, does not lead to the formation of toxic substances of note, at least in the presence of the normal flora of the canine colon. The fact that these dogs remained in perfect health and gained in weight would indicate that simple colonic stasis in the dog is harmless and suggests to the authors that the dire effects attributed to colonic stasis in man were, in part at least, due to some other cause than the absorption of the products usually formed in simple fecal stagnation.

Archives of Diagnosis, New York

April, IX, No. 2, pp. 91-190

46 Indications for Operative Interference in Duodenal Ulcer. J. B. Deaver, Philadelphia.
47 Value of Deep Percussion in Diagnosis of Subacute Intra-Abdominal Disease. H. Neuhof, New York.
48 Etiology and Diagnosis of Infective Diseases of Biliary Ducts. G. A. Friedman, New York.
49 Bands and Adhesions in Cecal Region. H. E. Stein, New York.
50 Lane's Kink and Band. H. E. Stein, New York.
51 Prognosis of Pulmonary Edema. T. F. Reilly, New York.
52 Chronic Bronchitis, Emphysema and Asthma. J. Epstein, New York.
53 Diagnostic Errors in Senile Cases. I. L. Nascher, New York.
54 Symptom in Extra-Uterine Pregnancy. H. J. Lehnhoff, Lincoln, Neb.
55 Differential Diagnosis of Diarrheas in Bottle Fed Infants. R. H. Dennett, New York.

Boston Medical and Surgical Journal

June 8, CLXXIV, No. 23, pp. 815-856

56 Cholecystitis; Changes Produced by Removal of Gallbladder. E. S. Judd, Rochester, Minn.
57 Nephropexy; Report of Cases. R. H. Gilpatrick, Boston.
58 Acute Perforation of Ulcers of Stomach and Duodenum; Report of Case. M. T. Field, Salem.
59 Postoperative Treatment. H. G. Giddings, Boston.
60 Streptococcal Infection Simulating Diphtheria. D. M. Lewis, New Haven, Conn.
61 Interesting Contact Case of Diphtheria. J. A. Ceconi, Boston.

June 15, No. 24, pp. 857-890

62 Respiratory Exchange, with Description of Respiration Apparatus for Clinical Use. (To be continued.) F. C. Benedict and E. H. Tompkins, Boston.
63 Studies of Basal Metabolism in Disease and Their Importance in Clinical Medicine. J. H. Means, Boston.
64 Physician and Prevention of Industrial Accidents. H. J. Cronin, Cambridge.
65 Two Cases of Syphilis of Lung. A. Post, Boston.

California State Journal of Medicine, San Francisco

May, XIV, No. 5, pp. 169-210

66 Adequate Institutional Care of Tubercular. P. H. Pierson, San Francisco.
67 Course of Fresh Syphilis as Treated by Newer Remedies. V. G. Vecki, San Francisco.
68 Fresh Syphilis and Newer Remedies. E. D. Chipman, San Francisco.
69 Modern Treatment of Syphilis. H. E. Alderson, San Francisco.
70 Treatment of Syphilis in Primary Stage. D. W. Montgomery, San Francisco.
71 Present Status of Salvarsan Treatment. H. Morrow, San Francisco.
72 Inconspicuous, Every Day Forms of Thyroid Insufficiency. H. R. Harrower, Los Angeles.
73 Oral Hygiene from Educational and Economic Viewpoint. G. S. Millberry, San Francisco.
74 Preoperative and Postoperative Care. O. McNeile, Los Angeles.
75 National Quarantine and Its Function. A. C. Reed, San Francisco.
76 Why Corrective Lenses Often Fail to Give Relief to Headaches Due to Eye-Strain. R. O'Connor, Oakland.
77 Plasmodium Malaria (Quartan) Type New to California; Report of Two Cases. J. C. Geiger and F. L. Kelly, Berkeley.
78 Slow Poisoning by "Christian Science." R. B. Dempsey, Vallejo.
79 Rubeola. W. W. Behlow, San Francisco.

June, No. 6, pp. 211-258

80 Conservation of Vision. G. H. Kress, Los Angeles.
81 *Human Cases of Rabies in California and Their Treatment. J. C. Geiger, Berkeley.
82 Conservative Treatment of Fractures of Long Bones and of Wounds Complicating Them. (To be concluded.) J. T. Watkins, San Francisco.
83 Large Cysts in Bladder; Report of Cases. H. Meyer, San Francisco.
84 Bacteriology of Nasal Sinus Diseases. J. J. Kyle, Los Angeles.
85 Twenty-Seven Transfusions at St. Luke's Hospital. F. W. Birtch, San Francisco.
86 Some Neurologic Conditions in Children. H. W. Wright, San Francisco.

81. Rabies Epidemic in California.—Of the thirty-three cases of rabies analyzed by Geiger, nine were having administered the Pasteur treatment or had completed the regular course. Of these, three came down with definite symptoms on the seventeenth day of treatment and one on the nineteenth day. Of the remaining, two showed symptoms in four days, two fifteen days, and one three weeks after the completion of the full course of treatment. Twelve of the patients were bitten in the face and two were attributed to the inoculation of the virus into scratches and wounds with the saliva of the animal doing the biting. One patient was bitten through the tongue. The balance of the bites were on numerous parts of the body. The shortest time of death after being bitten was sixteen days. This occurred in two instances, both patients being bitten on the face. Of the remaining cases, death in six occurred three weeks after being bitten, in two four weeks, in seven five weeks, in two six weeks, in one seven

weeks, in three eight weeks, in two nine weeks, and in one eleven weeks. The duration of illness in the majority of instances was three days, the longest being ten. In every instance but one, and that by a cat, the bites were caused by dogs. In only six of the cases were the wounds cauterized at all, five of these being with nitric acid. In fourteen instances, the diagnosis of rabies was proved by microscopic examination and animal inoculation, in three by microscopic examination alone, and in three by animal inoculation alone, and in fourteen by symptoms. Every sedative used failed to control the nervous condition in any way whatever. In four of the cases, quinin was used during the course of the disease without any effect.

Canadian Medical Association Journal, Toronto

May, VI, No. 5, pp. 385-480

87 Hospital Diets and Their Relation to Treatment of Certain Diseases. E. G. McCullough, Boston.
88 Medical Beliefs and Superstitions of Keltic Race. J. Cameron, Halifax.
89 Prostatic Hypertrophy and Treatment by Suprapubic Prostatectomy. C. L. Fuller, Toronto.
90 Results of Year's Work in Treatment of Acute Appendicitis. E. R. Secord and L. H. Coates, Brantford.
91 Amebic Dysentery. Amebic Abscess of Liver. A. H. Gordon, Montreal.
92 Double Facial Paralysis. G. S. Mundie, Montreal.

Journal of Cutaneous Diseases, Boston

June, XXXIV, No. 6, pp. 415-488

93 How Can We Improve Our Hospital Service? C. J. White, Boston.
94 *Two Cases of Idiopathic Hemorrhage Sarcoma (Kaposi). T. C. Gilchrist and L. W. Ketron, Baltimore.
95 *Psoriasis as Sequel to Acute Inflammations of Tonsils; Report of Case. J. M. Winfield, Brooklyn.
96 Monilethrix; Report of Six Cases. (To be continued). G. M. MacKee and I. Rosen, New York.

94. Idiopathic Hemorrhagic Sarcoma.—Three different methods of treatment were used by Gilchrist and Ketron in one of their cases and with excellent results. The patient was given daily intramuscular injections of ¾ grain of the cacodylate of sodium, and after ten days this was gradually increased to 2 grains. The hands, legs and feet were exposed daily to mild, soft Roentgen rays, and radium (10 mg. old measure) was applied for twenty-four hours to one nodule after another, on the arms and legs, until about 90 lesions were treated. After six weeks, the patient was remarkably better. The edema of the hands and feet had almost completely disappeared after three weeks' treatment, and the hands could be closed. In cases in which the Roentgen rays were applied, the induration had disappeared but the pigmentation remained. The radium applications gave decidedly the best results, causing the induration and pigmentation both to entirely disappear, leaving the skin practically normal. After six weeks' treatment, one could say, that his skin lesions were 75 per cent. better. The second patient was treated with filtered Roentgen rays and the lesions entirely disappeared and there has been no recurrence within the last ten months. The disease was found to be not auto-inoculable.

The authors' studies show that the lesions begin in the skin as angiomas, due to a proliferation and dilatation of the blood capillaries, which are very frail at first and liable to rupture. This is followed by a proliferation of the interstitial connective tissue and endothelium, which gradually obliterates the blood spaces, forming solid tumors. In the early stages these resemble, in some areas, young connective tissue, in other areas, sarcomas. As the lesions grow older they assume a more fibrous aspect, and may undergo involution. Coexistent with the formation of the tumors there is a sclerosis of the small arteries supplying them, causing a gradual decrease in the amount of blood. To this is due, most likely, their later evolution as well as involution. From this beginning, then, as a cutaneous angioma or later angiosarcoma, the disease spreads by metastases which first appear in the neighborhood of the primary lesion, and later become widespread both in the skin and internal organs leading, in many cases, to death.

95. Psoriasis, Sequel to Inflammations of Tonsils.—Six cases all following some inflammation of the tonsils are cited by Winfield. In one case the skin disease followed enucleation of the tonsils. Examination of smears taken from the throat failed to show any reason for the high temperature. In another case the skin disease was the sequel of a streptococcic sore throat. Psoriasis followed an attack of follicular tonsillitis in four cases. No etiologic light was thrown on the cause of the skin disease by bacteriologic examinations of the follicular contents and other secretions from the throat.

Journal-Lancet, Minneapolis

June 1, XXXVI, No. 11, pp. 309-339

97 *Medical Treatment of Diabetics Preparatory to Surgical Treatment. D. M. Berkman, Rochester.
98 Preventable Field; Relation of Practicing Physician, Local and State Health Officer. I. J. Murphy, St. Paul.
99 *Early Diagnosis of Intussusception in Children Under Three Years of Age. A. W. Abbott, Minneapolis.
100 *Raynaud's Disease; Some Unusual Types. G. D. Head, Minneapolis.

97. Medical Treatment of Diabetics.—The material for Berkman's report was drawn from the histories of the patients operated on in the Mayo Clinic during the past year in whose urine the presence of sugar was positively demonstrated. The purpose was to establish a method of determining the operability of such patients, and reasonably rapid and safe course of treatment preparatory to and after operation. The first object was to render the patient's urine sugar free as soon as possible; and for this no better procedure was found than that advocated by Allen. The use of sodium bicarbonate has become routine; and, Berkman and his associates feel that it has contributed in no small degree to the recovery of their patients. It is used in dram doses by mouth six to eight times daily, three or four days before the operation. This treatment is resumed as soon as possible after operation. Should the surgeon find it necessary to give rectal salines, soda is administered in this way also. They have on two or three occasions found it advisable to give it by intravenous injections in 5 per cent. solution. During the postoperative observation the urine is watched carefully, although keeping it free from sugar is more difficult, and is not as important as before operation. Twenty-six glycosuric patients came to operation. Two patients died, a mortality of 7.7 per cent. Eight patients were passing less than 10 gm. of sugar in twenty-four hours on an ordinary diet; and, other conditions being satisfactory, they required very little preoperative treatment, and that largely for the purposes of observation.

99. Abstracted in THE JOURNAL, January 22, p. 304.

100. Raynaud's Disease.—The cases cited by Head vary from the rule in their manifestations. In one case the fingers became white as if frozen (dead fingers). In another case the disease was associated with attacks of pain in the abdomen, accompanied by vomiting and diarrhea and associated with a blue cyanotic appearance of her hands and feet. Urine examination revealed a specific gravity of 1.020, a large amount of albumin and a few hyalin and granular casts. A third patient complained of a feeling of pressure over the lower chest and upper abdomen, which she described as "growing greater and smaller like a bubble expanding and contracting." She had no pain with these attacks. The fingers became marble-white and felt numb. The attack lasted about five minutes. A fourth patient had angiospasm of such a high degree as to produce, not only a series of puzzling abdominal symptoms, but also fainting attacks, polyuria, girdle pain, etc.

Laryngoscope, St. Louis

May, XXVI, No. 5, pp. 869-938

101 Articulorespiratory Disturbances of Speech. O. Glogau, New York.
102 Tuberculosis of Larynx with Special Reference to Use of Tuberculin. H. Hastings, Los Angeles.
103 Malignant Hypernephroma of Ethmoidal Region. H. Arrowsmith, Brooklyn.
104 Control of Hemorrhage in More Extensive Operations on Nose and Jaws. L. W. Dean, Iowa City, Iowa.
105 Case of Von Mikulicz' Disease. S. L. Olsho, Philadelphia.
106 Improved Killian Speculum for Operation on Antrum of Highmore. J. J. Sullivan, Jr., Scranton, Pa.
107 New Instruments. J. J. Sullivan, Jr., Scranton, Pa.

Medical Record, New York

June 10, LXXXIX, No. 24, pp. 1029-1070

108 Roentgenographic Control of Pneumothorax Treatment of Pulmonary Tuberculosis. I. S. Hirsch, New York.
109 Gastrohydrorrhea in Cirrhosis of Liver Accompanied by Pyloric Stenosis; Report of Cases. M. Einhorn, New York.
110 Case of Osteochondrofibroma or Osteitis Fibrosa; Report of Case. V. P. Gibney, New York.
111 Case of Complete Congenital Atresia of Ileum. R. H. Fowler, Brooklyn.
112 Case of Carcinoma of Esophagus Perforating into Right Bronchus. J. Guttman and I. W. Held, New York.
113 Case of Congenital Elevation of Scapula. S. Cohen, New York.
114 Is Myopathy Related to Disorders of Internal Secretions? G. P. McCouch and S. D. W. Ludlum, Philadelphia.
115 *New Theory of Function of Lymphocytes. D. Meredith, Wichita Falls, Texas.

115. New Theory of Function of Lymphocytes.—That there are both male and female cells within the body is an original theory with Meredith. He believes that the small lymphocyte is the male cell. For instance: Through the enzymes liberated by the dissolution of a dead cell, leukocytes and lymphocytes are attracted, the one to remove the dead tissue and the other to repair the damage. These same enzymes acting as a foreign body stimulate the adjoining cell, which begins to swell and get ready, as it were, for the male element, just as the ovum does for the spermatozoa, and when it becomes impregnated goes through the caryokinetic change, with a division of the cell into daughter cell, to take the place of the dead cell. Meredith does not think that it is necessary for a lymphocyte to come in actual contact with the cell that it impregnates, but that it does excrete from it nuclear material, when irritated, an enzymic body, which, when it comes in contact with cells that are beginning to proliferate, impregnates these cells, bringing about a true mitosis or indirect division of the cell thus impregnated.

Michigan State Medical Society Journal, Grand Rapids

June, XV, No. 6, pp. 273-326

116 Use of Chloroform as Obstetric Analgesic. W. H. Morley, Detroit.
117 Ether in Obstetrics. F. S. Kellogg, Boston.
118 Scopolamin-Morphin in Labor. Study of Twenty-One Cases. C. E. Boys, Kalamazoo.
119 Nitrous Oxid-Oxygen Analgesia in Obstetrics. C. H. Davis, Chicago.
120 Practical Application of Schick Reaction. G. Sewell, Detroit.
121 Symptoms and Early Diagnosis of Cancer of Large Intestine. L. J. Hirschman, Detroit.
122 Relationship of Heredity and Environment on Psychosis. I. L. Polozker, Detroit.
123 Case of Otogenic Pharyngeal Abscess with Review of Literature. C. B. Fulkerson, Kalamazoo.
124 Osteoma of Frontal Sinus; Report of Case. C. C. Probert, West Branch.
125 Histopathologic Studies of Multiple Sclerosis. T. Klingmann, Ann Arbor.
126 Reports on Use of Dakin's Solution (Hypochlorous Acid). C. B. G. de Nancrede and R. W. Kraft, Ann Arbor.
127 Case of Pseudohypertrophic Muscular Dystrophy. C. D. Camp, Ann Arbor.
128 Case of Leukemia without Hyperleukocytosis. Q. O. Gilbert, Ann Arbor.

Missouri State Medical Association Journal, St. Louis

June, XIII, No. 6, pp. 251-304

129 *Miners' Consumption in Southwestern Missouri; Report of Case. A. J. Lanza, Washington, D. C.
130 Treatment of Epithelioma by Roentgen Ray. J. L. McDermott, Kansas City.
131 What St. Louis Medical Supply Depot of U. S. Army Is and What It Does. T. U. Raymond, St. Louis.
132 Medical Preparedness. W. A. Wickline, Jefferson Barracks.
133 Experiences at Military Training Camp. R. E. Wobus, St. Louis.
134 Choice of Operation in Various Classes of Cases of Retrodisplacement of Uterus. H. S. Crossen, St. Louis.
135 Present Status of Argyll-Robertson Pupil. M. W. Jacobs, St. Louis.
136 Will Profession Have to Be Reeducated on Subject of Appendicitis? J. Y. Brown, St. Louis.
137 Fractures of Wrist. M. B. Hendrix, Caruthersville.

129. Miners' Consumption.—A series of physical examinations was made by Lanza embracing 720 miners. Definite signs of lung injury were found in 433, or 60 per cent.; 103 of these latter also had tubercle bacilli in their sputum. Throughout this series the most prominent symptom was dyspnea on exertion. The dyspnea was gradual, almost insidious, in its onset, and there was evident a connection between its severity and the length of time the miner had worked in sheet ground. The dyspnea was usually accompanied by cough and expectoration, but even dyspnea severe enough to incapacitate for work was seen without these other symptoms being present. The majority of the patients looked well, and aside from the dyspnea felt well. In many cases the dyspnea was severe, often urgent, and it was remarkable how men in this state continued to work underground. Pain in the chest, diminished expansion, and loss of weight were constant symptoms throughout. Loss of weight, while frequently present, was not marked until the third stage was reached. Cough antedated dyspnea when, as was sometimes the case, the latter was ushered in by a bronchitis, but more often the cough did not appear until after the dyspnea. Night sweats were not frequent. Hemorrhages were comparatively frequent, 3.3 per cent. of those in the first stage, 10 per cent. of those in the second stage, and 25 per cent. of those in the third stage, both tuberculous and nontuberculous, having had one or more. The prognosis in miners' tuberculosis after the first stage is bad. Lanza pleads for the accurate reporting of deaths from miners' tuberculosis because efforts to overcome an important industrial disease of this sort depend largely on reliable death statistics.

New Mexico Medical Journal, Las Cruces

May, XVI, No. 2, pp. 27-69

138 Local Anesthesia in Major Surgery. O. S. Fowler, Denver.
139 Arterial Hypertension. T. C. Sexton, Las Cruces.
140 Medical Nomenclature. W. W. Dill, Albuquerque.
141 Typhus. H. M. Cornell, Las Cruces.

New York Medical Journal

June 3, CIII, No. 23, pp. 1057-1104

142 Definite Management of Pneumonia. (To be continued). S. Solis-Cohen, Philadelphia.
143 Case of Hour Glass Gallbladder. R. S. Fowler, New York.
144 Lye Stricture of Esophagus. H. Arrowsmith, New York.
145 Diagnosis of Ureteral Calculus. V. C. Pedersen, New York.
146 Sarcoma of Tibia with Metastasis to Chest. E. P. Tompkins, Roanoke, Va.
147 Cases of Presenile Gangrene—Thrombo-Angeitis Obliterans. C. Goodman and E. P. Bernstein, New York.
148 Device for Protection Against Tubercle Bacillus. R. A. Keilty, Philadelphia.
149 Unusual Complications in Case of Glaucoma from Atropin. T. Y. Sulphen, Newark, N. J.
150 Pellagra; Clinical Report on State of New York. J. M. Winfield, New York.
151 Curatelle and Modern Psychiatry. G. W. Jacoby, New York.

June 10, No. 24, pp. 1105-1152

152 Therapeutic Resources of Saratoga Springs. S. Baruch, New York.
153 Surgery of Heart. W. W. Babcock, Philadelphia.
154 Delayed Gastric Digestion. M. E. Rehfuss, Philadelphia.
155 Definite Management of Pneumonia. (Concluded). S. Solis-Cohen, Philadelphia.
156 Case of External Dislocation of Knee; Report of Case. R. H. Fowler, New York.
157 Epidemic Pneumonia in Tropics. J. H. Egbert, New York.
158 Apparatus for Intravenous Salvarsan Injection. L. R. Kaufman, New York.

June 17, No. 25, pp. 1153-1208

159 Some of Larger Problems of Medical Profession. R. Blue, Washington, D. C.
160 Failures in Diagnosis. W. S. Gordon, Richmond, Va.
161 Focal Sepsis. J. Daland, Philadelphia.
162 Roentgen Ray Diagnosis of Surgical Complications Within Chest. G. E. Pfahler, Philadelphia.
163 Corroborative Diagnosis of Mastoiditis by Means of Roentgen Ray. H. Hays, New York.
164 Meningitis; Report of Seven Cases. R. C. Rosenberger and D. J. Bentley, Jr., Philadelphia.
165 Typhus. E. K. Tullidge, Philadelphia.
166 Camp Sanitation. P. W. Huntington, New York.
167 Radium in Gastric Carcinoma. C. E. Field, New York.
168 Leukocyte Count of Appendicitis. J. E. Robinson, Temple, Texas.
169 Cardiac Dilatation as Complication of Apical Pulmonary Tuberculosis. M. Grossman, New York.

New York State Journal of Medicine

May, XVI, No. 5, pp. 225-278

170 Will Private Practitioner Determine Future of Public Health Work? H. Emerson, New York.
171 Treatment of General Infections by Serums and Vaccines. A. MacFarlane, Albany.

172 *Materials Which Are Available for Thyroid Feeding and Their Therapeutic Uses. J. Rogers, New York.
173 Importance of Early Recognition of Arteriosclerosis. L. F. Bishop, New York.
174 *Syphilis as Etiologic Factor in Epilepsy. W. T. Shanahan, Sonyea.
175 Syphilis of Stomach. R. B. Morris, Olean.
176 Cancer from Medical Standpoint. L. D. Bulkley, New York.
177 Glenard's Disease; Report of Cases. B. C. Loveland, Syracuse.
178 Accidents and Injuries of Eyes—Their Prevention and Treatment. F. P. Lewis, Buffalo.
179 End Results in Cases Operated for Salpingitis. E. M. Stanton, Schenectady.
180 Two Cases of Acute Intestinal Occlusion Following Parturition. J. L. Greeley, Jamestown.

172. **Materials Available for Thyroid Feeding.**—Many cases which present thyroid enlargement and other symptoms which cannot definitely be classified as those of either hypothyroidism or hyperthyroidism may fail to be relieved by any kind of thyroid medication, but may have their disturbance improved or cured by feeding with material derived from some other organ. The nucleoproteins, globulins and coagulable proteins obtained respectively from the suprarenal, the pancreas, the thyroid, the pituitary and the ovary are sometimes efficacious. The dosage of these proteins is from ½ to 1 grain given by mouth three or four times daily. Rogers cites a number of very interesting cases. One was a case of typical myxedema illustrating hyperthyroidism after commercial thyroid feeding. Relief was obtained only by feeding with thyroid proteins. In another case of typical myxedema, relief was found by feeding with the thyroid "residue." Thyroid residue proved quite valuable in a number of cases of postoperative hyperthyroidism. One case of persistent menorrhagia with mild hypothyroidism was relieved by feeding thyroid "residue."

174. **Syphilis in Epilepsy.**—In a series of 886 patients at the Sonyea Colony on whom a Wassermann test was applied to the blood serum by Shanahan, but twenty-two, or 2.48 per cent., gave a positive reaction. Included in the number on whom tests were applied were all of those patients at the colony whose history or physical condition was at all suspicious as regards the existence of syphilis. The natural inference to be drawn from tests applied at the colony and elsewhere is, that syphilis plays a less active rôle as a causative factor in the occurrence of epilepsy than has heretofore been thought.

Pennsylvania Medical Journal, Athens

May, XIX, No. 8, pp. 581-646

181 Importance of Prevention of Industrial Accidents and Occupational Diseases. F. D. Patterson, Harrisburg.
182 Vaccine Treatment of Chronic Suppurative Otitis Media. G. M. Coates and M. S. Ersner, Philadelphia.
183 Operative Treatment of Strabismus. H. F. Hansell, Philadelphia.
184 Nonoperative Treatment of Strabismus. W. Reber, Philadelphia.
185 Etiology and Treatment of Trachoma. C. S. Rebuck, Harrisburg.
186 Factors Influencing Present Mortality of Peritonitis. D. B. Pfeiffer, Philadelphia.
187 Treatment of Undescended Testicle. J. H. Gibbon, Philadelphia.
188 Department of Health Laboratory and What It Has Done for Physicians of State. J. B. Rucker, Jr., Philadelphia.
189 Relationship Between Division of Medical Inspection and Physician. A. A. Cairns, Philadelphia.
190 Case of Attached Twins. J. K. Kiser, Kittanning.

South Carolina Medical Association Journal, Greenville

May, XII, No. 5, pp. 127-156

191 Psychiatric Aspects of Pellagra. W. C. Sandy, Columbia.
192 One Year's Experience with Model Vital Statistics Law in South Carolina. J. A. Hayne, Columbia.
193 Digestive Disorders in Infants. M. Ladd, Boston.

Southern Medical Journal, Birmingham, Ala.

June, IX, No. 6, pp. 483-576

194 Etiology and Treatment of Arthritis. E. D. Holland, Hot Springs, Ark.
195 *Influence of Potassium Iodid on Luetin Test. R. Lyons, New Orleans.
196 Focal Infections; Results of Overcoming Same. W. C. Mayes and C. F. Wilson, Memphis, Texas.
197 *Psychoses Associated with Pellagra. W. C. Sandy, Columbia, S. C.
198 Relation of Pellagra to Nutrition. M. O'Malley, Washington, D. C.
199 Better Babies Movement. B. L. Arms, Galveston, Texas.
200 Use and Abuse of Public Health Laboratory. C. R. Stingily, Jackson, Miss.
201 *Cancer of Mouth and Tongue with Special Reference to Metastases in Neck. J. S. Horsley, Richmond, Va.
202 Treatment of Suppurative Appendicitis. S. Leigh, Norfolk, Va.
203 Differential Diagnosis of Diseases in Right Upper Quadrant of Abdomen. A. C. Scott, Temple, Texas.
204 Peritonitis and Its Rational Treatment. U. Maes, New Orleans.
205 Preparatory Treatment for Transportation of Injured. B. Saunders, Fort Worth, Texas.
206 Secondary Tonsillar Hemorrhage. H. B. Decherd, Dallas, Texas.
207 Tonsil Factor in Bad Breath. W. R. Thompson, Fort Worth, Texas.

195. Abstracted in THE JOURNAL, Dec. 11, 1915, p. 2119.

197. **Psychoses Associated with Pellagra.**—One of the most common psychoses associated with pellagra, according to Sandy occurring twenty-eight times in 100 cases, is the infective exhaustive psychosis. Manic depressive insanity occurred sixteen times. There were four cases of symptomatic depressions; fourteen of dementia praecox. Fifteen cases of senile psychosis or senile dementia; three epileptic imbeciles or idiots, three cases of constitutional inferiority with episodes of some kind and three were not insane.

201. **Cancer of Mouth and Tongue.**—Summarizing the results of the eight patients treated by him, Horsley says, that all were advanced cases and seven were late cases with either a recurrence from a previous operation or incision or marked involvement of the glands of the neck. Three had both recurrence and glandular involvement. Four of the eight cases are living today (November, 1915). Of these, three are in good health and without any signs of recurrence for periods of thirteen months, three years, and three years and eleven months, respectively. The remaining patient who is living had a recurrence, for which he was operated on four weeks ago. He is now doing well and has some chance for permanent recovery. Of the four patients who are dead, two died of recurrence, one from sudden stoppage of the heart an hour after an operation for plastic closure of the defect in the mouth. This patient died with a recurrence, but not because of it. Another patient died of an indefinite lung lesion. Of the four deaths and one patient with a recent recurrence, three had had an incision for diagnostic purposes with operation done several days later and two had incomplete operations followed by rapid recurrence. In none of the three patients now living and who have been free from recurrence for from over one year to nearly four years was a preliminary incision made, but in the five remaining cases, four of whom are dead and one who has had a recent recurrence, a preliminary incision or incomplete operation was done in each instance from several days to several weeks before the radical operation was undertaken.

Vermont Medicine, Rutland

May, I, No. 5, pp. 129-156

203 Clinical Notes on Alcoholic Multiple Neuritis. C. H. Dean, Salisbury.
209 Neisserian Infection Complicating Pregnancy. O. N. Eastman, Burlington.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, London

April, III, No. 12, pp. 585-758

1 Analysis of Sixty Cases of Gunshot Fractures of Femur. E. W. H. Groves.
2 Treatment of Fractures of Femur at Casualty Clearing Station. A. Bowlby.
3 Gunshot Fractures of Femur. E. K. Martin.
4 Study of Symptoms and Complications of Gunshot Wounds of Solid Abdominal Viscera. G. H. Makins.
5 Gunshot Wounds of Solid Abdominal Viscera. C. Wallace.
6 Seventy-Five Cases of Gunshot Wounds of Chest. J. L. Menzies.
7 *Flapless Amputation. M. Fitzmaurice-Kelly.
8 Case of Trench Foot in Absence of Frost. S. G. Luker.
9 Traumatic Rupture of Common Bile Duct in Boy Six Years Old. G. E. Waugh.
10 Simple Goiter and Its Treatment. F. N. G. Starr.
11 Some Surgical Uses of Celluloid; Technic of Fracture Operations. G. S. Thompson.
12 *Gunshot Wounds of Cranium; With Special Reference to Those of Brain. R. Whitaker.

7. **Flapless Amputation.**—The method which gives the best chance of life to the patient is that which leaves the nutrition of the stump unimpaired to the end; in which, in other words, the nutrition is not cut off by the undermining of flaps; and now, after nearly two years experience, Fitzmaurice-Kelly considers gaseous gangrene as an absolute indication for a flapless amputation. Other conditions for which he employs the method, though for different reasons, are certain cases of compound comminuted fractures and of multiple wounds. The advantages claimed for this method are: That it saves life; that it saves length of limb; that the risk of secondary hemorrhage is lessened; that it arrests the spread of infection, whereas in flap amputations sepsis often recurs in the flaps, and spreads up from their base; and that it is possible where no other method is possible. As to the technic: the skin and deep fascia are divided, usually in circular fashion, but sometimes more skin can be gained by making the incision oblique; after retraction has occurred the muscles are divided at the level of the retracted skin—not too quickly, so as to allow a retraction of the layers; then the bone is sawed flush with the muscle; vessels are secured and nerves carefully shortened. The surface is slightly concave at first if the operation has been done properly, but soon becomes convex from further retraction. This, however, once the face is fairly clean, is overcome easily by extension. Strips of strapping are laid up the limb to the joint above, fixed with circular bands, and then carried down to a large ring of malleable aluminium to which a weight extension is attached. In the middle the stump is easily accessible for dressing. In this way all that has been lost by retraction can be regained rapidly, and it is rarely necessary to do more than remove a length of bone with a Gigli's saw.

12. **Gunshot Wounds of Cranium.**—Whitaker claims that the brain and its coverings have a greater power of resistance to sepsis than they have been given credit for. To this general statement there are two exceptions: If the infection be (*a*) streptococcic, or (*b*) intraventricular, the resistance is low. The brain and its coverings also have a very much greater power of recovery from an injury than the early signs and symptoms caused thereby would suggest. The apparent hopelessness of a brain injury should not be allowed to influence an operator—working in suitable environment—in arriving at a decision whether to interfere or not. While it is obviously desirable that every case of gunshot wound of the brain requiring operation should be thus treated at the earliest possible moment, yet Whitaker's experience has shown that if this operation be performed inadequately, or under unfavorable circumstances, the risk to the patient of introducing a new and more virulent infection is such a real one, that his interests may well be best served by those responsible for his transit to a base hospital, if they confine their attention to active disinfection and careful frequent dressing, and possibly the administration of antistreptococcic serum until his arrival there. Of the cases that arrived at the general hospital without having been previously operated on, 3 per cent. had streptococcic infection. Of the cases that arrived having already been operated on 58 per cent. had streptococcal infection.

Assuming that the patient has arrived at the base hospital: When in doubt, operate. In performing the operation, it is better to err, if at all, on the drastic side rather than the conservative. Prolonged hunting for fragments of bone, etc., known or thought to be lodged in the brain substance, is inadvisable. The element of time is of great importance in these operations. It is the type of infection rather than the extent of the injury itself which is the determining factor of the prognosis. In a small proportion of cases, after the wound has healed and after a latent period of several weeks, there arises a fatal infection by the *Staphylococcus albus*, either in the form of septicemia or of a secondary infection of a hemocephalus. It is desirable that all cases of head injury should be kept quiet with drugs for as long as may be necessary, and fed as much as possible from the earliest moment in order to obviate the extreme emaciation which is characteristic of the more severe cases. The cases must be dressed every twelve hours, and with the utmost care. The recovery of an infected brain wound depends on the maintenance of the freest possible drainage.

British Medical Journal, London

May 27, I, No. 2891, pp. 745-776

13 Louse Problem at Western Front. (To be continued.) A. D. Peacock.
14 Soldier's Foot and Treatment of Common Deformities of Foot. R. Jones.
15 *Case of Traumatic Arteriovenous Aneurysm of Subclavian Artery and Vein. C. Berkeley and V. Bonney.
16 *Case of Penetrating Wound of Heart. R. G. Dixon and P. McEwan.
17 *White Gangrene; Report of Cases. A. J. Hull.
18 Simple and Inexpensive Methods for Fermentation Tests and for Obtaining Cultures of Anaerobes. J. M. Beattie.

15. **Arteriovenous Aneurysm of Subclavian Artery and Vein.**—A rifle bullet struck the authors' patient just outside the axillary border of the right scapula near its inferior angle, emerging just above the middle of the right clavicle. The wound of entrance was healed and the wound of exit practically healed, but underlying it in the subclavian triangle was a pulsating swelling about the size of a double walnut. There was a very marked thrill, which could be felt and heard even so far as the bend of the elbow. The right arm was entirely paralyzed. A diagnosis of arteriovenous aneurysm of the third part of the subclavian artery and vein and injury to the brachial plexus was made, and as the swelling in the neck was steadily enlarging and the patient was painfully conscious of the loud thrill, it was decided to operate. The operation consisted of an excision of the sac and the second and third parts of the artery. The sac lay between the third part of the subclavian artery and vein, and communicated with both. The aperture into the vein was fortunately small, and was situated about the point where the external jugular joins it. The sac wall was very thin. Its front part was formed by the deep cervical fascia; behind and above it adhered to the brachial plexus, while the first rib and clavicle had limited it below. Eight months after the operation no abnormal pulsation could be found in the neck, nor any pulsation at all in the arm, which was normal in warmth and color. The arm, however, was still paralyzed, though there was some return of power in the muscles of the shoulder and the flexors of the forearm. There was loss of sensation over that part of the hand supplied by the ulnar nerve.

16. **Penetrating Wound of Heart.**—In the case recorded by Dixon and McEwan the patient was wounded, while in the upright position, by a rifle grenade. There was a small wound one-half inch to the inner side and one-half inch above the left nipple. His temperature rose to 102 F., pulse 130, respiration 45. He was semiconscious all the time he was in this hospital. He knew his name, regiment, and home address, but kept on trying to get out of bed, and was often delirious. He never complained of any pain either in the chest or arm, but suffered considerably from thirst. The heart sounds were normal. There were signs of fluid in both pleural cavities, more on the right than on the left side. There was neither cough nor expectoration. He lived fifty-nine and one half hours after receiving the injury, and having during that time been conveyed from the regiment to the field ambulance, and from that unit to the clearing station. At the necropsy a small external wound, situated just above and internal to the left nipple, was traced transversely inward for about 2 inches through the subcutaneous tissue and chest muscle; its subsequent course was through the sternum, leaving the internal mammary artery intact; then through the edge of the left lung, the pericardium, the right ventricle and the pericardium; finally the missile was found imbedded in the right lung.

17. **White Gangrene.**—The condition described by Hull appears to be an acute streptococcal infection, and is, in appearance, not unlike phlegmasia alba dolens, but is attended by the local circumstances associated with gangrene and the general effects of an acute toxemia. This form of gangrene has only been seen in the lower extremity. The skin is glazed and white, moist, cold and pits on firm pressure. A very firm edema is present, and the distal pulse

in the limb cannot be felt. The glazed white appearance of the distended skin, instead of the usual redness, seems particularly characteristic. Early in the condition the patient is extremely ill, with clammy, sweating face, and running pulse. The condition is extremely fatal, and death occurs in about twelve hours. The infection is so rapidly fatal that little change in the color of the limb has been noticed. In those cases which have survived somewhat longer, it has been found that, during the last few hours, the limb has become mottled black and the discharge exceedingly foul. No gas has been noticed in the discharge, and no crackling has been detected in the tissues. The appearance is somewhat suggestive of deep seated pus, owing to the tension of the skin, but, on making an incision into the limb, the wound merely oozes serum. In the more severe and extensive forms the infection is so severe and the patient's condition so serious that no treatment appears practicable. Amputation gives the only chance of recovery, and is successful when the infection is localized.

Journal of Tropical Medicine and Hygiene, London

May 15, XIX, No. 10, pp. 117-128

19 Epidemic Cerebrospinal Meningitis as Seen in Anglo-Egyptian Sudan. A. J. Chalmers and W. R. O'Farrell.

Lancet, London

May 27, I, No. 4839, pp. 1069-1110

20 Typhus in Serbia. R. O. Moon.
21 Arrangements for Care of Cases of Nervous and Mental Shock Coming from Overseas. W. A. Turner.
22 *Congestion in Treatment of Cases of Epidemic Cerebrospinal Meningitis. D. Forbes and E. Cohen.
23 *Treatment of Gunshot Wounds by Packing With Salt Sacs. A. J. Hull.
24 Anatomic Position of Localized Foreign Bodies. J. Metcalfe and E. N. Keys-Wells.
25 Simple Tertian Malaria in French Flanders. A. C. Rankin.
26 Warfare Neuroses of Throat and Ear. J. F. O'Malley.
27 Cases of Head, Abdominal and Joint Injuries. H. E. Brown.
28 Odor of Paint as Cause of Plumbism. H. H. Moyle.
29 Diabetes Insipidus Developing Suddenly, With Uterine Fibroids; Hysterectomy. J. Oliver.
30 Case of Acute Tetanus With Hematemesis. V. M. Métivier.
31 Notes on Camp Sanitation. A. White.

22. **Treatment of Epidemic Cerebrospinal Meningitis.**—The treatment advocated by Forbes and Cohen is said not to interfere with concurrent treatment. Congestion of the cerebral vessels is brought about by raising the foot of the bed not on blocks, but on stools or lockers, so that the bed and the patient's body, no pillow being allowed, make an angle of from 14 to 23 with the floor. The method is said to influence the course of the disease profoundly; five cases so treated are reported. In mild cases in a few days a normal temperature and free movement of the head result, and the recovery is uninterrupted. In more severe cases the temperature rises and the patient more gradually recovers, the recovery being at first accompanied either or both by increased tension of cerebrospinal fluid and a greater migration of polymorphs. If the foot of the bed has been raised too high there may be very severe headache and persistent vomiting due to a too great congestion and its results. In such cases, if the bed is lowered and the tension is relieved by puncture, the patient gradually recovers.

23. **Packing of Gunshot Wounds with Salt Sacs.**—The solid salt sac used by Hull consists of a two-walled sac of suitable size made of bandage, between the layers of which four layers of gauze are placed. The interior of the sac is filled with salt and the tail of the bandage forms a drain. These sacs are made in several sizes, sterilized in an autoclave, and stored ready for use. One or more of them are used to pack the wound, the intervals between the sacs being filled with gauze. A tube of perforated zinc or rubber may be passed into the depth of the wound in cases of large septic wounds. Long slender sacs are made to fill bullet tracks. Small sacs are made for draining tracks in the brain. The free end of the sac is passed into a vessel containing saline solution and the wound then drains by capillary attraction. A fine rubber tube may be run in along each sac, and drip irrigation carried out if required. The salt remains undissolved for several days and when the sacs are removed from a wound at the end of a week undissolved salt still remains. Hull claims that a wound cavity filled with gauze and salt may be considered as effectively drained as if the cavity were inverted and the walls dressed as a surface wound. Every portion of the surface area is drained by the osmotic action of the salt, and the capillary action of the gauze and bandage is continually removing the discharge and producing a continuous and automatic drainage and lavage of every portion of the interior of the wound.

Sei-I-Kwai Medical Journal, Tokyo

May, XXXV, No. 5, pp. 23-28

32 Schlatter's Disease; Report of Cases. S. Ikawa.
33 Some Complications in Typhoid. Y. Takaki.

Bulletin de l'Académie de Médecine, Paris

May 16, LXXV, No. 20, pp. 583-606

34 Localized Tetanus. Bazy.
35 *Ultimate Outcome After Resection of Joints for War Wounds. (Valeur fonctionnelle des membres après résections des grandes articulations pour blessures de guerre — 1914-1915.) Nové-Josserand and Tuffier.
36 Variability of Symptoms in Tardy Tetanus. L. Bérard and A. Lumière.
37 *Perivascular Neuritis After Contusion of Limb. (Contusion profonde et massive du membre inférieur. Intervention sur le sympathique périvasculaire.) R. Le Fort.
38 Standardization of Catgut. E. Quénu and Others.

35. **Functional Outcome of Resection of Joints.**—This communication reviews the outcome after 1,132 resections of shoulder, elbow or wrist and 678 of the hip, knee or ankle. Primary resections gave unsatisfactory results for the shoulder in 80 per cent. and for the elbow in 70 per cent., while the proportion was only 32 per cent. in the secondary resection cases. The primary resections were made more hastily, without care to retain enough periosteum, or else the lesion was too destructive to permit function or repair. Even at the worst, the limb was saved, and this in itself is ample ground for rejoicing. Primary resection gave better results for the knee than the elbow, while, with secondary resection, the elbow fared better than the knee. See also Paris Letter in THE JOURNAL, June 17, p. 2000.

37. **Painful Myositis and Neuritis After Contusion.**—The contusion occurred during the explosion of a bomb and the right leg swelled for two weeks but there were no erosions. The muscles of the leg atrophied and two large bunches could be palpated, but the main symptom was the atrocious, spontaneous pain without any definite location. After six months of this martyrdom, unmodified by the numerous measures applied, Le Fort decided to act on the sympathetic nerve. Instead of obtaining access to it by way of the abdomen or the sciatic or femoral routes, he attacked it in the popliteal region, stripping the popliteal artery over a stretch 6 cm. long. The artery was found abnormally contracted, without perceptible pulsation. Improvement set in within four or five days and has progressed constantly since. The trouble in such cases involves vessel and nerve; it may possibly be from infiltration with blood of the sheath of the vessel. Denudation of the artery for a certain stretch combats this. It proved effectual also in a case of an extreme edematous condition of the hand following a wound of one finger.

Journal de Médecine de Bordeaux

May, LXXXVII, No. 7, pp. 121-142

39 The War Nurse. (De l'utilisation de la femme comme infirmière en temps de guerre. Qualités et devoirs de l'infirmière.) C. Fromaget.
40 Mechanism of Infection of Brain and Meningitis After Fracture of Skull. (Enfoncement du temporal par coup de pied de cheval et fracture transversale de la base.) L. Rocher and Daudin-Clavaud.
41 Anomalies in the Muscles of the Axilla. (Anomalies musculaires du creux axillaire.) Princeteau and Jeanneney.
42 Immobilization in Case of Extensive Wounds. (Brancard-gouttière immobilisateur pour grands blessés.) J. J. Matignon.

Journal d'Urologie, Paris

October, 1915, VI, No. 5, pp. 505-600

43 *Bullet in Bladder Removed by Natural Route. (L'extraction par les voies naturelles des balles de la vessie.) F. Legueu.

44 *Transvesical Prostatectomy Under Local Anesthesia. C. Perrier.
45 *Eosinophilia Not Constant With Hypertrophied Prostate. (L'éosinophilie permet-elle de diagnostiquer l'hypertrophie prostatique?) C. Perrier and J. Muster.
46 *Deep Injections of Alcohol in Treatment of Neuralgia From Cancer in Bladder-Prostate Region. (Traitement des névralgies dans les affections vésico-prostatiques.) L. A. Surraco.
47 *Technic for Nephrotomy and Nephrostomy. G. Marion.

43. Extraction of a Bullet From the Bladder.—Legueu has always had to operate to get out fragments of shells from the bladder, but he has been able to remove by the natural route all the smooth bullets that have forced their way into and remained in the bladder. The first thing is to be sure the bullet is actually inside the bladder, and loose. The history of the case and roentgenoscopy are not always instructive; in one case the bullet entered by way of the shoulder. The hematuria indicating the perforation of the bladder wall may escape detection, while in the reclining position the bullet in the bladder causes no functional disturbance and there is nothing to suggest that there is a bullet in the bladder until the man begins to be up and about. Then vague pains at micturition may attract attention to the pelvis. When the bullet changes its place abruptly with change of position, it is generally loose in the bladder. He seizes it with a lithotrite, No. 00, the blades of which are hollowed out a little. The bullet is then easily drawn out by the tip or base. Cystoscopy and anesthesia are not required.

44. Transvesical Prostatectomy Under Local Anesthesia.—Perrier combines various procedures for local anesthesia of the region, and extols the harmless and complete analgesia he has thus realized with the minimum of trouble and inconvenience. The abdominal-vesical wall is anesthetized by infiltration and also the region on a line from ischium to ischium, passing in front of the anus. This permits painless deep injection of the same solution; under guidance of the left forefinger in the rectum, it is injected under the capsule of the prostate, using needles 12 or 15 cm. long. With this finger the capsule can be felt distending as this is done. Then with the same needles and a 1 per cent. solution, the sacral nerves are blocked and the prostatectomy can then be done without fear of causing any pain, even under the most adverse circumstances, as in the obese.

45. Eosinophilia With Enlargement of the Prostate.—Perrier and Muster have been examining for eosinophilia in all cases of prostate enlargement and found it marked in 33 per cent. of their twenty-two cases. The absence of eosinophilia, however, in all the other cases deprives it of practical value as a sign of hypertrophy of the prostate. Legueu reported recently that he had found eosinophilia marked in 87 per cent. of his cases of adenoma while the eosinophils were below the normal figure in the cancer cases, among his eighty-five patients.

46. Alcohol Injections in Treatment of Sacral Neuralgia.—Surraco refers to the agonizing pains in the sacral region in the course of cancer in the bladder, prostate or urethra. He places the patient under the influence of scopolamin and morphin and then injects the alcohol through the holes in the sacrum to act on the second, third and fourth nerves. The second hole is on a horizontal line about 2 cm. below the posterior superior iliac spine. The other holes are about 2 and 4 cm. below this, about 2 cm. from the line of the spinous processes. The needle is introduced for half a centimeter and 2 c.c. of alcohol are injected in each hole, each side of the median line. In four extremely severe cases of neuralgia from cancer in the bladder or prostate a single sitting banished the neuralgia permanently during the three or five months to date in three cases. A second injection was required in the other.

47. Technic for Nephrotomy and Nephrostomy.—This exposition of the fundamental principles for these operations is profusely illustrated. Marion warns particularly against secondary hemorrhage; it is liable to occur toward the end of the second week, especially in kidneys with normal parenchyma but slightly infected. The oozing may burst open the healing incision. If sure of the other kidney, it may be wiser to remove the bleeding organ, otherwise, ligation and tamponing under constant supervision.

Lyon Médical, Lyons

May, CXXV, No. 5, pp. 141-176

48 Amebic Abscess of the Liver Latent up to Perforation; Three Cases. Cros and de Teyssier.
49 *Paraffin Spray for Wounds. (Note sur la paraffination et la cération des plaies.) H. Bertoye.
50 *War Wounds of the Chest; Fifty-Three Cases. (Les plaies pénétrantes de poitrine par projectile de guerre. Le syndrome hémo-pleuropneumonique.) Piéry. Concluded.
51 The Depopulation of France and Means to Remedy It. R. Lépine. Concluded.

49. Paraffin Spray for Wounds.—Bertoye sprays a mixture of paraffin and petrolatum or wax on wounds and says that it protects the wounded tissues from injury from without, and that the dressings do not stick and the wound heals faster. The paraffin can be medicated when desired. The spray can be applied without fear of infection from the hands, and it is proving an ideal dressing for superficial lesions, mild burns, etc., as well as deep wounds after they have been cleared out and drained, reducing the pain and hastening healing. He adds that as the paraffin layer is lifted by pus accumulating below, there need be no fear of holding back secretions.

50. Wounds of the Chest.—Piéry here summarizes his conclusions from study of fifty-three cases of penetrating wounds of the chest. There is always intrapleural hemothorax and pneumonia always develops, the fever chart showing its rise and fall and relapses. The tardy resolution and tendency to relapses are the special features of this type of injury. Repose and revulsion, with ipecac and digitalis to combat the congestion in the lungs, are the main factors in treatment. No attempt at operative treatment should be made; the hemothorax in particular should be respected, he insists. The extraction of the projectiles in the wall should be deferred as long as possible. Convalescence should be guarded with special care, particularly against chilling. Prompt pleurotomy is indicated if pus is revealed by puncture.

Paris Médical

May 20, VI, No. 21, pp. 473-488

52 Winter in a War Prisoners' Camp. (Dans un camp de prisonniers en Allemagne.) Ribadeau-Dumas.
53 Filiform Drainage Ensures Rapid Healing of Mammary Abscesses Without Scar. (La guérison rapide et sans cicatrice des abcès du sein.) H. Chaput.
54 Electrotherapy for War Wounds. (Considérations sur l'utilisation du courant sinusoidal alternatif dans l'électrothérapie de guerre.) O. Genevois.
55 Suggestions for Safeguarding Interests of Physicians Absent on Active Service. (Le service médical des populations civiles et la défense des clientèles des confrères mobilisés.) Granjux.

Presse Médicale, Paris

May 18, XXIV, No. 28, pp. 217-224

56 "Fraternitas Medicorum." F. Helme.
57 *Glycuronic Acid in the Urine; Variations in Health and Disease. (La glycuronurie.) H. Roger.
58 Disturbance in Growth of Hair on the Limbs as Sign of Nerve Lesion. (Les troubles du système pileux des membres.) M. Villaret.
59 Pain From Injury of Nerve Plexus Spreads to Other Side. (Les irradiations symétriques dans les lésions traumatiques des plexus nerveux.) A. Hesnard.
60 Moving Pictures as Aid in Teaching Obstetrical Operations. (De l'emploi du cinéma dans les démonstrations opératoires d'obstétrique.) V. Wallich.

May 22, No. 29, pp. 225-232

61 Diagnosis of Complete Interruption of Popliteal or Sciatic Nerve. (Le diagnostic de l'interruption complète des gros troncs nerveux des membres. II.) Pr. and Mme. Dejerine and J. Mouzon.
62 *Palpitations From High Blood Pressure. (Les palpitations par hypertension artérielle aux armées.) C. Lian.

May 25, No. 30, pp. 233-240

63 Jointed Wooden Legs. (Les pilons articulés. Leurs transformations — leurs principes.) Ducroquet.
64 *Favorable Action of Hypertonic Solutions Plus Liquid Paraffin for Dressing Infected Wounds. (Action favorable des solutions hypertoniques et de l'huile minérale dans le traitement des plaies infectées.) A. Goubaroff (Moscow).

57. Glycuronic Acid in the Urine.—Roger remarks that now that we have simple and sufficiently exact methods for estimation of the glycuronic acid in the urine, it behooves us to ascertain its clinical significance. He discusses its chemical composition, describes the technic for its deter-

mination, and reports the results of research on glycuronuria in health and disease, especially with disease of the liver. Glycuronic acid neutralizes the toxic action of a number of substances. The active toxic element combines with the glucose or its derivative, and is thus rendered comparatively harmless. As the liver stores up glucose, it seems natural to assume that this neutralizing occurs in the liver, and the amount of glycuronic acid in the urine is thus a gage of the functional capacity of the liver. When the reserve of glycogen is low, the glycuronuria declines. A test dose of camphor, salol or naphthol will elicit a negative reaction if the liver is insufficient. The glucose in the liver is not merely evidence of the functioning of the liver. It aids in the formation of compounds of slight or no toxicity, compounded from elements otherwise toxic plus the glucose in the liver. The glycuronuria thus affords insight into what is going on in the liver, as he shows by the findings in twenty-nine cases of cirrhosis of the liver.

62. **"Palpitations" with High Blood Pressure.**—Lian warns that soldiers may present palpitations which are liable to be mistaken for a harmless nervous manifestation when in reality an abnormally high blood pressure is responsible for them. Nothing but the sphygmomanometer will reveal the true state of affairs.

64. **Hypertonic Solution and Paraffin for Dressing Wounds.**—Goubaroff clears out the wound as usual and flushes it with an isotonic salt solution or Dakin's fluid. Then he rinses it out thoroughly with an 8 or 10 per cent. solution of salt, leaving a little in the wound, which is then fitted with large rubber drains and filled up with gauze impregnated with liquid paraffin. The oil prevents the gauze from sticking, while the hypertonic solution induces a copious discharge. He relates that the wounds healed under this treatment better than with any other technic, unless possibly under exposure to direct sunlight.

Progrès Médical, Paris

May 20, XXXII, No. 10, pp. 73-80

65 Radium in Treatment of War Wounds. (Radiumthérapie des blessures de guerre.) Barcat.
66 Apparatus for Extension of Fractured Phalanx. P. Batigne.
67 Advantages of Kefir in Children's Diseases. (De quelques emplois du kephir.) A. Satre.

Revue de Chirurgie, Paris

February, XXXV, No. 2, pp. 177-336

68 *Treatment of Fractured Femur in War; Twenty-One Cases. (Sur le traitement des fractures de cuisse en chirurgie de guerre.) S. Pozzi and A. Peuret.
69 Treatment of Severe Wounds in War; 1,500 Cases. (Les grandes blessures de guerre. Etude sur 1,500 cas traités dans une ambulance chirurgicale de l'avant.) A. Chalier and R. Glénard. To be continued.
70 Strangulation of Small Intestine in Prolapse of Large Intestine Through Artificial Anus. (De l'étranglement de l'intestin grêle dans un prolapsus du gros intestin au niveau d'un anus contre nature.) M. Guibé. Concluded.
71 *Necessity for Operating Room and Work on the Firing Line. (Le poste chirurgical avancé.) J. and P. Fiolle.
72 Simple and Easy Extraction of Needle from Cavity of the Auricle of Boy of Nine. Prompt Recovery. R. Leriche.

68. **Fracture of the Femur.**—Pozzi and Peuret have had twenty-one cases of extensive fracture of the femur, including six that were permanently clinically aseptic and fourteen with suppuration. The treatment found simplest and most effectual was a combination of extension with suspension in a kind of hammock—the American apparatus, as they call it. One or more illustrations are given of each case showing the comparatively good results attained.

71. **Operating in the Trenches.**—Fiolle expatiates on the enormous advantage of immediate skilful surgical repair, and urges that bomb-proof operating rooms be dug out connecting with the system of trenches. He says that no special heroism is required to operate in a bomb-proof shelter on the firing line. In many systems of trenches an advanced surgical post of this kind would be very useful, but in others, where the wounded cannot be transported by day, it is absolutely indispensable and there should be an ample supply of surgeons.

Correspondenz-Blatt für Schweizer Aerzte, Basel

May 13, XLVI, No. 20, pp. 609-640

73 *Disturbances in Ossification in Regions Where Goiter Is Endemic. (Ueber des Ossifikationsstörungen beim endemischen Kretinismus und Kropf.) C. Wegelin.

May 20, No. 21, pp. 641-672

74 *The Psychic Action of Bromids Utilized in Treatment of Melancholia. (Ueber psychische Wirkungen des Broms.) A. Ulrich.
75 Packing Specimens to Send to Pathologic Institutes. (Wie sollen Präparate an das Pathologische Institut eingesandt werden?) O. Busse.

73. **Defective Ossification with Endemic Goiter.**—Wegelin says that at Bern the children are born with a more or less prominent goiter, almost without exception. His study of cadavers of children stillborn or dying soon after birth has shown that abnormal ossification processes are common. One manifestation of this is the lack of any center of ossification in the lower epiphysis of the femur at birth. He tabulates the findings in 70 of these infant cadavers, including 39 from 50 to 56 cm. in length and 31 only 45 or 49 cm. long. In 23.1 per cent. in the first group the center of ossification here was missing as also in 61.3 per cent. in the other group. All but 6 of the children had a pronounced goiter. The thyroid weighed 10 gm. in a number; 20 gm. in two, and in one 39 gm. Among the 6 newly born with normal thyroids, the center of ossification was missing in only one, and this was a prematurely born infant. He thinks there can be no doubt that the abnormal ossification processes are due to abnormal thyroid functioning. Other data are cited to confirm this view, among them the necropsy findings in a man of 47 whose growth had been abruptly and permanently arrested at the age of 12 by a partial thyroidectomy for goiter. The boy developed after the partial operation a condition similar to cretinism, and was left practically a dwarf. Wegelin recalls Lanz' experiments on hens fed with thyroid extract. They laid more and larger eggs than the control hens, while the reverse was obtained by thyroidectomy. The practical conclusion of Wegelin's research is the necessity of thyroid treatment for disturbances in ossification, at least in regions where goiter is endemic.

74. **Psychic Action of Bromids.**—Ulrich is director of the Swiss institution that cares for epileptics. He here relates experiences which confirm the antagonistic action of salt in respect to bromids, so that we have bromin poisoning completely under our control by regulating the intake of salt. He has further established that the bromid modifies the mood to such an extent that it puts an end to melancholia, and he declares that we can banish melancholia at will by pushing bromid treatment without fear of bromin poisoning as we can annul the latter at any moment by increasing the intake of salt. Extreme caution and individual study of the case are necessary, but this systematic bromidization to the stage of cerebrospinal bromism he insists is no more dangerous than a general anesthesia. Both require that the patient should be under constant medical supervision, his state of nourishment and heart and kidney action being under constant control. The bromid must be pushed until there is actual tipsiness from it, the patient staggering in standing and walking, as if drunk, with characteristic disturbances in speech, writing and memory. This *Bromrausch* should be maintained until the melancholia has given place to the characteristic euphoria or at least until the mood has completely changed. In some cases repetition of a mild course has a better effect than a single intensive course. The bromid is pushed while all salt is withdrawn. The dosage ranges from 2 or 3 gm. to 4, 5 or 6 gm. sodium bromid. When the desired result has been attained the bromid is gradually reduced while salt is given more and more freely. Bromid acne has nothing to do with the psychic action, and had better be avoided by giving a few drops of Fowler's solution twice a day after meals. He reiterates that bromin seems to have a selective action on the excitement and depression of neurasthenics and certain epileptics, transforming them to a submanic euphoric mood. Bromin poisoning has lost all its terrors since we have learned that it is completely under our control. It is wrong to stop the bromid abruptly when an epileptic is taking it; increasing the intake of salt answers

the same purpose without danger of bringing on attacks. Even with anemic and bedridden patients we need have no fear of bromin poisoning under continuous bromid treatment, if the total intake of salt is twice that of the bromid. He knows of intelligent and hard working men in responsible positions who keep well in body and mind through years and years, taking from 2 to 4 gm. bromid daily.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 11, XXXVII, No. 38, pp. 593-608

76 Organization of Isolation Service in the War Zone. (Sull' organizzazione dei servizi di un locale d'isolamento in Zona di Guerra.) F. Pancrazio.

May 14, No. 39, pp. 609-624

77 Aneurysm of the Celiac Artery Diagnosed During Life. G. Carbone.

May 18, No. 40, pp. 625-640

78 Annular Opacity of the Crystalline. (Opacita anulare del cristallino. anello contusivo del Vossius). D. Bruno.

Policlinico, Rome

May 7, XXIII, No. 19, pp. 581-612

79 Baccelli Memorial Number. (L'apoteosi di G. Baccelli in Campidoglio April 30, 1916.) See THE JOURNAL, June 3, 1916, p. 1789.

May 14, No. 20, pp. 613-644

80 Specific Agglutinins and Bacteriolysins in Serum After Vaccination Against Cholera. (Sulle agglutinine e sulle batteriolisine specifiche nel siero di sangue dei vaccinati contro il colera.) L. Sestini and R. Marantonio.

81 *Temporary Dislocation of the Bone in Treatment of Severe Infection. (Le dislocazioni ossee temporanee nella cura delle piu gravi infezioni settiche delle fratture e delle articolazioni.) G. Lerda.

May, Surgical Section No. 5, pp. 129-160

82 *Experimental Renal Sporotrichosis. G. Bolognesi.

83 Influence of Traumas and Operations on the Manifestations of Malaria. I. Di Pace. To be continued.

84 Ligation of Coronary Arteries and Veins Alone or Together. (Legatura separata e simultanea delle arterie e delle vene coronarie del cuore. Studio sperimentale e clinico.) L. Dominici. To be continued.

81. **Temporary Dislocation of the Bone in Treatment of Severe Infection.**—Lerda refers to bone and joint lesions in which it is impossible to drain all the recesses and the condition is going rapidly from bad to worse. In a number of such cases, as a last resort, he dislocated the head of the bone in the joint or the stump of the fracture and forced it up out of the wound. This opened up all the recesses and permitted appropriate treatment, with prompt recovery in many previously hopeless cases of gas gangrene, etc. He gives a number of illustrations of typical cases showing the temporary luxation of the bone. In only one of his cases was the method applied to the arm. When a condition has been reached that will permit reduction, the restitution is complete.

82. **Experimental Sporotrichosis.**—Bolognesi has made a special study of experimental sporothrix lesions in bones and joints, and he here relates similar research with the sporothrix inoculated directly in the rabbit kidney. The microscopic findings in the kidneys when the ten rabbits were finally killed are reproduced. The resulting progressive infectious granulomas were practically alike in all. In one case a focus developed also in the ureter. The sporothrix used was an agar culture, and the control animals were inoculated with sterile agar.

Brazil-Medico, Rio de Janeiro

April 22, XXX, No. 17, pp. 129-136

85 *Semeiology of Pain in the Abdomen in Women. (Semiologia da dor abdominal direita na mulher.) R. Vaz.

86 Classification of Nematoid Worms. (Nematoides prejudiciaes ao homem. Sua classificação.) A. A. da Matta.

April 29, No. 18, pp. 137-144

87 Black Pityriasis—Melasma—With Central Depigmentation. (Pityriasis nigra centro-albicans.) P. Valladares.

85. **Abdominal Pain in Women.**—Vaz describes instances of intense abdominal pain of puzzling origin, analyzing the possible factors involved. He emphasizes the multiple causes that may be at work, and that much reliance as to the diagnosis cannot be placed on tender points unless they are verified beyond mistake and located with precision. A localized muscular spasm is instructive but with general rigidity and toxemia and with obesity, differential diagnosis is almost impossible. In one case pain throughout one ovarian region persisted unmodified by treatment for the assumed ovarian lesion, and roentgenoscopy revealed a stone in the ureter near this point. Unsuspected movable kidney and chronic duodenal ulcer are liable to give misleading clinical pictures. One patient had suffered from the latter for over twenty years before the lesion was recognized. Abdominal pain caused by unsuspected thoracic disease is comparatively common. Richard has reported six cases of pneumonia simulating appendicitis at first. He adds that the records of a London hospital (Middlesex) for 1910 and 1911 show that six out of 100 pneumonia patients were sent first to the surgical ward for supposed appendicitis, as also one patient with pleurisy, one with endocarditis and four with pericarditis, and that laparotomy was done in four of the cases before the true condition was recognized.

Semana Medica, Buenos Aires

April 6, XXIII, No. 14, pp. 379-406

88 Subcutaneous Symphysiotomy; Three Cases. E. Zarate.

89 Examination of the Patient's Previous History. (Anamnesis.) D. Speroni.

90 Case of Dengue at Buenos Aires. F. A. Deluca.

91 Milne's Prophylactic Treatment of Scarlet Fever; Six Cases. (Consideraciones sobre el metodo de Milne.) G. B. Cavazzutti.

92 Professional Secrecy. (Del secreto medico.) A. Stucchi.

Siglo Medico, Madrid

May 6, LXIII, No. 19, pp. 289-304

93 Present Status of Knowledge of Sleeping Sickness. (La enfermedad del sueño—tripanosomiasis humana.) G. Pittaluga. To be continued.

May 13, No. 20, pp. 305-320

94 Removal of Bladder for Cancer. (Tratamiento operatorio de los tumores malignos de vejiga. S. Pascual.

95 Sleeping Sickness. G. Pittaluga. Continued.

May 20, No. 21, pp. 321-336

96 *Modification of Y Gastro-Enterostomy — T Gastro-Enterostomy. (Una modificacion al procedimiento de gastroenterostomia en Y de Roux: gastroenterostomia en T.) J. Goyanes.

97 Sleeping Sickness. G. Pittaluga. Continued.

96. **T Gastro-Enterostomy.**—Goyanes sutures the proximal stump of the jejunum to the stomach at its lowest point and then sutures the distal stump at the lowest point of the loop thus formed by the proximal stump. The chief advantage he claims for this technic is that the segment of intestine between the stomach and the lower suture is in reversed physiologic position. The peristaltic waves run upward toward the stomach, and thus tend to check overhasty evacuation of its contents. This technic therefore provides a kind of neosphincter. Two illustrations show the points of difference between this T gastro-enterostomy and Roux' Y gastro-enterostomy of which it is a modification.

Russkiy Vrach, Petrograd

XV, No. 12, pp. 265-288

98 Gunshot Wounds of Blood Vessels. A. P. Krimoff.

99 *Further Observations on Thoracotomy for Foreign Bodies in the Thorax. V. M. Mintz.

100 Case of Stone Formation in the Bladder After a Gunshot Wound. R. S. Krim.

101 Reaction of Living Tissue to Irritation and Its Practical Import. (Znachenie reaktsie zhivoi tkani na raazdrazhenie v prakticheskom otnoshenii.) L. I. Omorokoff.

102 Apparatus for Sterilization of Dressings, etc., with Steam Under Pressure. V. N. Pilkoff.

103 Treatment of Compound Fractures of Femur. (K liecheniu oslozhnennikh perelomov bedrenoi kosti.) N. A. Ilinsky.

104 *Ether-Oil Rectal Anesthesia in Surgery. (K voprosu ob obshtshei anestesii . . . pri pomoshtshi etherno-maslianikh klizm.) A. K. Evropin; (Idem.) O. A. Revidtsova and Y. B. Dombrovskaia; (Idem.) G. A. Garnak.

105 Cane Sugar in Ringer-Locke's Fluid versus Grape Sugar. I. G. Kutateladze.

No. 13, pp. 289-312

106 Certain Surgical Problems Rendered Urgent by the War. I. E. Hagen-Torn.

107 Is It Necessary to Ligate the Vein When the Circulation in the Homonymous Artery is Obstructed? N. A. Bogoraz.

108 A Simple Apparatus for Tapping Pleural Effusions. N. A. Ilinsky.

109 *The Alkaline Hemoglobin Agar of Esch in the Diagnosis of Cholera. K. N. Shapsheff.
110 *Cholera-Like Vibriones. E. U. Gen.

99. **Operative Removal of Foreign Bodies in the Chest.**—Mintz reports four more cases of successful operations on the lungs and pleura for removal of bullets and other foreign bodies (a broken needle in one case). He found these operations simple and free from danger. The bullets were usually found 5 cm. below the surface and they were always surrounded by an infected space. The depth of 5 cm. Mintz considers safe to reach with the knife without danger of injuring the large vessels. Whether it is safe to go deeper than 5 cm., further observations will show.

104. **Ether-Oil Mixture for General Anesthesia.**—Evropin used ether-oil anesthesia in urgent operations for resection of limbs (eight cases) or for purulent appendicitis, hernia and cellulitis. The patients usually were in a grave condition, with a weak pulse and nearly unconscious from loss of blood. Two hours before the operation an ordinary enema is given, after which the body weight was determined, and 0.01 gm. (one-sixth grain) morphin given. Then he injected into the rectum a mixture of equal parts of ether and olive oil, in the proportion of 1 gm. of each to each pound of body weight. A patient weighing 160 pounds received thus 160 gm. of ether and as much of oil. About four minutes after the enema the smell of ether became perceptible in the patient's breath. This was followed six minutes later by slight excitement, but without nausea or vomiting, and by anesthesia of the lower limbs. The respiration became deeper and more regular, and the pulse stronger. Complete sleep usually set in about thirty or thirty-five minutes after the rectal injection. After the operation what was left of the ether-oil in the rectum was removed by means of an ordinary enema with plain water. No post-anesthetic complications were ever noticed, such as headache, weakness, etc. Evropin found this method of general anesthesia simple, safe and of great value in the military environment when there was not sufficient help to be obtained.

Revidtsova and Dombrovskaia used the ether-oil anesthesia in forty cases, in four of which the desired anesthesia could not be obtained, and inhalation of ether (20 or 25 c.c.) had to be resorted to. They used 90 or 100 gm. of ether, mixed with the double amount of oil. They point out the advantages of this method as mentioned in the previous abstract, but they also call attention to the fact that the dose cannot be individualized as in the inhalation method. With the latter, the anesthesia can be stopped at any moment, which is not the case with the rectal method, though they did not meet with any unfavorable complications in their forty cases.

Garnak uses a bottle supplied with two glass tubes. The shorter tube is connected with a rubber tube which in its turn is connected with a thin catheter. The anesthesia starts with the turning of the bottle, from which the ether enters the rectum. Lowering of the bottle causes the ether to leave the rectum. Thus it escapes from the rectum in case the narcosis seems to be too deep. With this technic it is also possible to avoid excessive distention of the intestines with the ether fumes, as they freely escape through the glass tube into the bottle. The latter is kept at the proper height to regulate the inflow and outflow in turn. Garnak used this method mostly for operations on the face and had no complications. The only disagreeable feature was the prolonged sleep; the patients slept for four hours. He also made two experiments on dogs with plain ether and with Gwathmey's mixture. With ether alone the mucous membranes were found extremely hyperemic, with a tendency to hemorrhages. With the ether-oil mixture the hyperemia was comparatively slight.

109. **Bacteriologic Diagnosis of Cholera.**—Shapsheff warmly recommends Esch's agar for the diagnosis of cholera, especially when haste in the diagnosis is required. He found that Esch's medium enables one to find cholera colonies even in those cases in which with ordinary alkaline agar they cannot be detected. The diagnosis of cholera can be thus made within twelve hours. In addition, the results are more accurate.

110. **Vibriones Resembling Those of Cholera.**—Gen found that the reaction of agglutination is the only sure sign for differentiating the cholera vibrio from others merely resembling it.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

May 6, I, No. 19, pp. 1589-1660

111 *Scraps of Mucous Lining of Stomach in Stomach Content. Exfoliating Gastritis. (Over slijmvliesstukjes in maaginhoud.) E. C. van Leersum.
112 Influence of Coarse Bread on Gastric Secretion. (Invloed op de maagafscheiding door het bruinbrood.) G. Prins.
113 *Importance of Roentgenography in Revealing Sinusitis, Especially Disease in the Frontal Sinus. (Over het nut der röntgendiagnostiek bij aandoeningen van de voorhoofdsholten.) A. de Kleyn and H. W. Stenvers.

May 13, No. 20, pp. 1693-1772

114 *Customs in Regard to Sickness of the Inhabitants of the Dutch East Indies and Their Ethnologic Significance. (Gebruiken bij ziekten der inlanders van onzen Oost en hun ethnologische beteekenis.) J. P. K. de Zwaan.
115 *Simple Operative Treatment of Senile Entropion. (De entropionoperatie van Carron du Villards.) W. Koster.
116 Deafness and Heredity. (Doofheid en erfelijkheid.) P. J. Waardenburg.
117 Plastic Deformity of Skull Causing Clinical Picture Like That from Hypophysis Tumor. (Een geval van basilaire impressie.) H. W. Stenvers.

111. **Exfoliating Gastritis.**—Van Leersum makes a practice of examining the stomach content and wash water for scraps of mucosa and has found in the last two years eighty-eight such scraps, obtained from forty-three patients; nine from one patient. The scraps are characteristic of exfoliating gastritis only when they are found repeatedly. The pain with this affection may be considerable but is usually less than with gastric ulcer; other symptoms may suggest gastric catarrh. A special feature of exfoliating gastritis is that there may be intervals of weeks or months during which the stomach may be apparently normal. The other objective findings are merely tenderness in the epigastrium and some loss of flesh. Gastroscopy showed the mucosa of a somewhat different color from normal in the one case in which van Leersum applied it, but he saw no erosions. After a test breakfast he found in a number of cases examined that the acid content was never above 2.5: 1,000 and usually ranged between 0.5 and 1. He never found achylia. The stomach content is more fluid than with mucous gastritis, but when poured it threads.

Various experiments and experiences have demonstrated that the mucosa heals remarkably quickly after the scraps have been thrown off. Serious hemorrhage has never been known with it, and there is no other stomach affection which responds so readily and so completely to treatment. This includes sparing the stomach all irritation from insufficiently chewed and overhot food and from spices, etc. This protects the vulnerable mucosa against injury, and it is strengthened directly by treating with an astringent. Nothing is so excellent for this purpose, he reiterates, as silver nitrate. He has the patient take, three or four times a day, before meals, 15 c.c. of a solution of 0.5 gm. silver nitrate in 300 c.c. distilled water. A couple of bottles of this solution generally carry the patient through, but usually three or four bottles are needed as the subsidence of symptoms does not mean that the cure is complete. The course can be repeated later if symptoms return, but the patient must be warned that this treatment should not be repeated without medical control. The nails and gums show the first signs of silver poisoning. He has noticed this even after as small a total intake as 2 or 3 gm. Discoloration of the skin occurred in one patient with a gastric ulcer who had used 6.7 gm. of the silver nitrate in the course of three years.

Van Leersum says that all the food should be mashed soft, in purée form, unless we can convince the patient of the superior advantages of doing the soft mashing with his teeth. The habit of taking tea, coffee and soup too hot is responsible for many cases of rebellious chronic gingivitis and pharyngitis and chronic gastritis. When practicable and convenient, instead of the above method of giving the silver nitrate, he rinses out the stomach with half a pint or more of a 1:4,000 solution of silver nitrate, gradually doubling the strength.

This can be repeated daily for two weeks when done with great care to rinse out all the drug afterward and leave none in the stomach.

112. **Frontal Sinusitis Revealed by Roentgenoscopy.**—De Kleyn and Stenvers report two cases in which severe headaches were finally explained by roentgenoscopy which revealed suppuration in a frontal sinus. Rhinologists had been unable to discover anything wrong on examination of the nose, the sinusitis running an entirely latent course except for the headaches.

114. **Customs in Regard to Sickness in the East Indies.**—This long article describes the various habits and customs of the natives in the Dutch East Indies in regard to pregnancy, parturition and sickness. De Zwaan seeks to explain the rice-strewing and similar customs on an ethnologic basis.

115. **Operative Treatment of Entropion.**—Koster cuts three perpendicular oval pieces out of the lower lid and sutures the lips of each gap together, thus correcting the entropion. If the patient refuses the knife, the same result can be obtained by taking up and suturing three folds in the lid.

Hospitalstidende, Copenhagen

May 17, LIX, No. 20, pp. 465-488

118 The So-Called Secondary Lichenoid Kerion of Celsius; Six Cases. (Om de saakaldte sekundære likenoide Trikofytider.) M. B. Pedersen.

Hygiea, Stockholm

LXXVIII, No. 3, pp. 161-224

119 *The School and Infectious Diseases. H. von Matern.

119. **The School and Infectious Diseases.**—Von Matern discusses with much detail, including the results of personal experience, the length of the contagious stage and other problems of the control of acute infectious diseases. He emphasizes in particular the necessity for intelligent and loyal cooperation between the school and the home, with concrete instances of what should and should not be done, and gives a tentative set of rules for the school and the family.

Norsk Magazin for Lægevidenskaben, Christiania

May, LXXVII, No. 5, pp. 589-716

120 *Passage of Tubercle Bacilli into the Blood with Bone and Joint Tuberculosis. (Om tuberkelbacillers overgang i blodet ved ben-og ledtuberkulose.) N. Paus.

121 *Research on Absorption from and Excretion in Effusions. (Om resorption og utskillelse i patologiske væskeansamlinger, særlig plevraekssudater.) O. Scheel.

122 Recovery from Otogenous Suppurative Meningitis; Two Cases. F. Leegaard.

123 Transposition of Viscera. (Medfødt abnormt leie av tarmkanalen. Retropositio coli.) J. Borchgrevink.

120. **Tubercle Bacilli in the Blood with Bone and Joint Tuberculosis.**—Paus presents evidence which confirms anew that the bearer of a tuberculous focus is liable any day to have it spread by passage of the bacilli into the blood and setting up of new foci. His research confirms the clinical importance for tuberculosis in adult life of bone and gland tuberculous lesions in children. Tuberculosis can lie latent through years and decades, but a focus once established always bears in itself the possibility of further spread of the disease when circumstances rouse it to flare up anew. Paus' article is based on repeated examination of the blood from 50 patients with bone or joint tuberculosis. Inoculation of animals he regards as the most reliable means for testing the blood, but only 6 gave a positive result. Tubercle bacilli were never found but on one occasion in these 6 cases; the blood was sterile at all other times. The positive findings were generally early in the disease and in the more acute types. Only one of the 6 positive patients was well nourished; the others were debilitated. The positive findings were about equally divided between the febrile and afebrile cases. In 9 cases the blood was examined during or soon after tuberculin treatment but no tubercle bacilli were found. In 4 of the 6 positive cases there were signs of renal tuberculosis along with the bone tuberculous processes. This combination is more than casual coincidence. In his last 15 operative cases of kidney tuberculosis, there was a history of bone processes in 3. Multiple foci were common, especially in the skin, various bones or joints, tendon sheaths, bronchial or other glands, intestines and meninges, and air passages. The discovery of tubercle bacilli in the blood has no appreciable import for diagnosis, prognosis or treatment except in so far as it reaffirms the necessity for regarding tuberculosis as always more than a mere local affection. Extermination of each focus, however, reduces the danger by just that much.

121. **Absorption from and Elimination in Pathologic Accumulations of Fluid.**—Scheel injected methylene blue or indigocarmin into the tissues or into the effusion and recorded the rate and time of the elimination of the stain in the effusion or other fluid and in the urine. The results show that this may prove a means for estimating the prognosis. In acute, transient pleurisy, for instance, the stain is promptly eliminated in the urine, and the pleural effusion soon shows no further traces of the stain, even when it had been injected directly into the pleural effusion. The pleural effusion clears itself of the stain more promptly when conditions are approaching the stage of clinical absorption of the pathologic accumulation. When there is a tendency to fibrous transformation, or the effusion is becoming organized, the stain lingers longest in the pleural cavity. He tabulates the findings in forty patients with various effusions, ascites, etc. Two weeks he found was the limit for absorption of the stain in the effusions with a favorable prognosis. He further investigated the behavior of the stain in the blood.

Ugeskrift for Læger, Copenhagen

April 27, LXXVIII, No. 17, pp. 633-696

124 Vestibular Nystagmus. C. Peschardt.

125 Artificial Carbonated Baths. (Kulsyrebade.) A. Faber and S. Marcussen.

May 4, No. 18, pp. 697-744

126 Chronic Habitual Constipation. (Bidrag til den kroniske habituelle Obstipations Klinik og Røntgenologie. I.) T. E. H. Thaysen. Commenced in No. 17.

May 11, No. 19, pp. 745-784

127 Pituitary Extract in Intravenous Treatment of Obstetric Hemorrhage. (Anvendelsen af Pituitrin som intravenøs Injektion, spec. ved Blødning i Fødslens forskellige Tidsrum.) A. Tofte.

128 *Research on Occult Bleeding. (Undersøgelser over okkult Blødning.) J. P. Gregersen. Commenced in No. 18.

128. **Occult Blood in the Stools.**—Gregersen tabulates the findings as 147 patients supposedly free from ulceration in the digestive tract were examined. The subjects were the inmates of the medical ward, examined without discrimination. The ages ranged from a few months to 87 years. The diet in twenty-eight cases had included meat within a few days and the findings were constantly positive in this group. In the 1,310 specimens from 147 patients who had had no meat within four or five days, the findings were constantly negative in all but eighteen. Even in this group the reaction was negative in most of the tests. The diet must not contain meat, but milk, butter, eggs, fruit, bread, potatoes, tea, coffee and cocoa and also well cooked fish do not modify the response. As the various patients had been taking different drugs, the constantly negative reaction confirms that certain drugs do not affect the response to the test; namely, bismuth, iron, arsenic, mercury, barium sulphate, salicylic acid, tannalbin, antipyrin, hexamethylenamin, camphor, senna and castor oil. None of these drugs or their derivatives seemed to modify in the least the response to the test. His comparative study of the various technics for determination of occult blood in the feces confirmed the superiority of the benzidin test. It is far simpler and quicker, while it is fifty times more sensitive than the Weber or other technics. This test applied to scraps of feces taken as far apart in the stool as possible gave always the same findings, confirming the regular blending of the feces throughout. Ingestion of four doses of 0.3 gm. blood, each, was followed by a positive response to the benzidin test without fail. The benzidin solution must be made fresh each time, dissolving 1 per cent. pulverized benzidin in equal parts glacial acetic acid and hydrogen dioxid. Ten or 20 drops are then dropped on the thin layer of feces on an object glass. In less than a minute a green, bluish-green or blue tint appears in case of positive findings, and the tabulated data confirm the clinical importance of a positive response.